

THE MINES AND MINERS OF CORNWALL.

[Continued from last week's Mining Journal.]

Connected with almost every mine is a sick club, or benefit society, of some kind or other. For the payment of £1. a week to the club, a miner, when ill, or labouring under the consequences of an accident, has the benefit of good medical attendance. If he pays 1s. 3d. a week, he is entitled to such attendance for his family as well as himself, in addition to which he gets a certain weekly allowance, if he is detained from work by illness, or an accident. The miners have no option as regards these clubs, the adventurers requiring them to join them. Indeed, a deduction on this account is made from their earnings. There is also a forge attached to each mine, at which the tools used by the miners are sharpened and repaired. For such work as they may have had done at the mine a deduction is also made on each day. There is likewise the barber of the mine, who, like any other deduction being made on this account. Further deductions are made for the candles, gunpowder, and so forth, which they may use when at work below. The number and variety of their deductions may be taken from the following list, which I find in an account now before me:—Subsist and barber, doctor and club, candles, powder, lifts, fire, rope, cane, nails, shovels, locks, paper, barrows, canvass, smith cost, trimming, wheeling, dressing and labour, tonnage, tramping down, stems, and spales.

One of the greatest evils attending the employment of the miner is the speculative character which it assumes. His whole life is spent in a species of gambling. If he

more than a few, as new men come in, and the old men may be getting old; but, if he has a few acres of bays, he may make a good deal of money, and, after all, if he has a few acres, he may all the time be getting in debt, not only with tradesmen, but with the adventurers, for the supply of such articles as he uses in mining, and the value of which is deducted from his earnings. It is the fiftful character of his earnings that justifies the remark made to me by one very competent to decide, that where one hears of a tributer having 14s. or 15s. a week, it is seldom that he can be put down as so well off as an agricultural labourer, with constant work, at 10s. When men get tired of it, they cling with tenacity to the idea of settlement, and such is the hope of the tributer. Considerable advantages are to be derived from the use for which it may be put, but it is unremunerative, and the inroads which it makes upon health—the wonder is that it is pursued at all. The counterbalancing element to all these acknowledged drawbacks, in the tributer's mind, is the great gain that is sometimes made. The circumstances under which the miners thus earn and receive their money impart a general recklessness to their character. Some of them have sufficient forethought and self-control to lay by, in their day of prosperity, what enables them to meet, without difficulty, a series of unlucky adventures. But the bulk of them are too apt to spend their money as fast as they get it, and sometimes to get into debt, and to be driven to the most extreme form of extravagance. As a class, they would be much better off if regular and fixed wages could be given them; but, owing to the difficulties attending the supervision of work in the mines, such a course is deemed impracticable.

The captains must be shrewd, active men, well acquainted with the practice of mining; for the miners are sometimes inclined to be lazy, and at others to play tricks. The amount of work done by the tubman is, generally, easily ascertained by the quantity of stuff brought to the surface. But, this is not well watched, he is apt to pretend that the ground is better than it really is, and to take advantage of the ignorance of the surveyor in the modification of his bargain. The tributers are also prone to make very unfavourable representations of their pitches, in order, if possible, to raise the amount of their tribute. Thus, they will send to the surface the poorest part of the lode, representing it as the best, as evidence that their complaint is well grounded. To counteract such devices, the captains must be constantly on the look out. There is a trick called "kitting," to which the tributers sometimes resort. When a pitch supposed to be bad is taken at a high rate of tribute, say 13s., and one supposed to be good at a low rate, say 6s., they are apt to pitch the good stuff in the one of the high rate, and the poor stuff in the other, so that the surface, as coming from the poor pitch, and the high rate of tribute, instead of the low rate, is generally paid upon it. The gain by this is divided amongst those concerned in the imposition.

The house accommodation of the miners is, generally speaking, of a very inferior description. It is worse in the eastern mining districts than in those of the west. In the east the houses are generally small, and the number of persons crowded into them is enormous. In the western mining districts, the houses are generally larger, and the accommodation is more comfortable. Until lately it was not generally supposed that there was much over-crowding in the midland districts; but many startling revelations in respect to this have recently been made by the house-to-house visitation of the different local boards of health. It is now ascertained that in the eastern mining districts, and in some of the western, there will be found a larger proportion of good cottages amongst the tenements occupied by the miners than elsewhere in the county. Many of these, generally the best of them, have been built by the miners themselves—that is to say, by such of them as have been able to accumulate a small sum of money.

are the older cottages, which can be easily distinguished from the others by their mouldy walls, small windows, and thatched roof. Many of the modern cottages are well built, being two stories high, and well lighted; they are usually covered with slate. Their position, too, is better selected, with a view to health, than has been that of the older cottages; but the advantages of room and good position are in too many instances counterbalanced by the numbers which crowd into the best of the cottages as well as the worst. I was told by a member of the Local Board of Health for Camberne that he knew of a case in which 14 slept in one room—some of them being members of the family, and the rest lodgers in the house. On my asking him how many beds they had to sleep on, his reply was, that "the room was all beds. The rent of a goodly sized cottage is from 3*l.* to 4*l.*, exclusive of points for gas. Such a family as themselves can procure a good cottage, with a kitchen, for from 40*l.* to 50*l.*; they have generally a piece of ground attached to it, to occupy them during their spare time. Many such houses have been built by the miners in the neighbourhood of Penzance. Of these numbers are now deserted and tenanted, their owners having emigrated, some with and others without their families. So anxious were the men to get away, that they have, in many cases, left the houses which they themselves have put up at their own sole cost.

The manufacture of dresses in the village has increased in the last two years. It has greatly increased. The increase is attributable to the greater ease with which they now procure the materials for dress — a "tailor-men," or peripatetic dealers, permeabating the country in all directions, selling to them goods at high prices, but taking payment in kind, and greatly exceeding the value of the money. Some men, some women, at church on a Sunday, or enjoying themselves at a fair before the town, would not care that there was much distress of any kind amongst them. Most of the men are attired in fine broad cloth, whilst the women parade their finery. But many who come out covered with the most elegant and costly fashions, emerge from holes and dens more resembling the vicinity of our Jupiter shanty.

I was not prepared to find the diet of the miner so poor as it generally is. I have seen many instances, in all the mining districts of Cornwall, of families living in great comfort, having a good and spacious house to live in, and a sufficiency of nourishing food to consume. The children, too, in such cases, are generally sent regularly to school; but, in all these cases, I found that the husband was a prudent saving man, who kept his small account at the savings' bank, and that the wife was a good manager, thrifty, and attentive to her household duties. Much depends upon management. Some families get on very comfortably on 50s. a month, with which others cannot manage to escape great privation. The love of dress greatly affects the miner's diet. This is frequently but a coarse unleavened paste, with, perhaps, a few pieces of turnip, or an apple or two enveloped in it. Sometimes he has melted the turnip and apple, and applies nothing but the heavy paste, which is occasionally seasoned with a few raisins or currants. Numbers of them seldom taste meat; indeed, many have told me that they have been for weeks together without partaking of it. In many such cases, however, their own improvidence is chiefly to blame. Such as work underground during the day take their pasties with them to the mines. If they are at work not far from the surface, they ascend about the dinner hour, and have the pasties heated for them at the forge. When they are too far below to do this they eat them cold. The surface workers have half an hour generally allowed them for dinner. Those underground eat when they please.

As has been shown to have been the case with the fisher, the loss of the potato has also been a great blow to the miner. Whether a tuitman or a tributer, he generally works not about eight hours a day, and has thus a great deal of spare time on hand. If it, in fact, is not the case, he is not a miner, but a labourer. He is not, therefore, employed. So long as the potato succeeded, the spare time of the miner was, in perhaps the majority of instances, well employed. If he had not a garden attached to his house, he generally rented a piece of ground, which he applied to the production of potatoes and other vegetables. These holdings varied from an acre to two or three acres of land, and were generally leased to him for three lives. In some districts, where the land had not been so long before, he would have a piece of land, and even if it was not a produce to cultivation, he would have the death of the potato had not been so calamitous. A large proportion of Lord Falkmouth's present rental is derived from land originally reduced by the miner. The miner was thus always secure of a good supply of potatoes and other vegetables, for the climate of Cornwall is admirably adapted for the production of vegetables of almost all kinds. The quantity of potatoes which he produced was frequently not only sufficient for the consumption of his family, but also for the feeding of his pigs. He would sell enough of it to enable him to buy another young pig or two, sufficient being left to supply some animal food to his family. When he killed two pigs, which was

unusual, he would save enough to enable him not only to buy two other young pigs for the succeeding year, but also to pay the rent of his plot of ground, so that the remainder of the pork, and the potatoes and other vegetables which he had for the use of his wife and children, would be sufficient to support him and his family. He was his own and his family's comforts may be easily imagined. In addition to the employment of his own spare time, it also gave employment to his wife and children. The chief advantage of this was, that, in many cases, it enabled the parents to send the children for some part of the day to school. But it was also advantageous to the adventurers and the public. The miner, when certain of a sufficient supply of potatoes and other vegetables, was generally more contented, and less liable to quarrel with his employers, and more venturesome in accepting the discovery of new lodes. The very high rate of tribute is generally given in such cases, and miners have frequently thus realised their luckiest adventures. If, for instance, a miner had reason to believe that, in a certain place not yet worked, a lode existed which would pay for the working, he would offer to try his luck, at a tribute of, perhaps, 13s. in 12. If his judgment was correct, for the month or two following the discovery, he would be able to furnish a considerable supply of potatoes, and himself a claim to continue employment in the lode, which he had enterprise and acumen enough to see. He might thus add to those already worked by the adventurers. If he failed, he lost his time and his trouble; but still he was not destitute, inasmuch as he had his potatoes and other vegetables, and his pig or pigs, to fall back upon. He was not thus absolutely dependent from month to month for subsistence upon his money wages, as he is too generally represented to be. He was not, therefore, in a position to be so easily deceived as he was, for in the majority of cases, if he were to run the risk and fail, he would be rendered absolutely destitute by the loss of his time and the stoppage of his wages. It would be erroneous to suppose that the cultivation of the potato has been altogether abandoned. The prospect of its again succeeding, is likely to restore confidence in it, and it is probable that, in the course of a year or two, its cultivation will be successful, and that the present depression of the potato market will be over. This will effect great changes for the better in the condition of the miner and his family.

The outlines of the *tesaro* are as follows:—Julian Altamont, son of the Earl of Devonport, mainly beyond his years, and manifesting mental powers of the most extraordinary character, is fascinated by the knowledge, eloquence, and instruction of an old man—an old joining land proprietor named Leon *Æl* phage, who is an asceticist and an alchemist, and who has been a student of the occult sciences, having been trained in all the mystic lore which it was in the power of Leon to bestow. Between them they render Julian a direct visionary; and, in spite of the wishes of his father and the sollicitations of his mother, he determines, instead of battling the real energies of life in the senate, the bar, the church, to devote his life to the study of wisdom, and the attainment of that high perception of the beautiful for which he considers *ars* *magica*. He will devote the whole of his life to the study of the occult sciences, and will not be deterred by the sensual passions; he will send forth his words, like ministering spirits, to spread his mysterious music. He will enter nothing but the truth; but he will thunder that loudly that men shall tremble at its eloquent earnestness. It is to guard against this dangerous enthusiasm and false mode of reasoning, and, at the same time, to inculcate a spirit of inquiry into the truths of philosophy, that the narrative has been written; and it is to be hoped that the reader will find in it a warning against the error, on the occasion of the death of Leon's daughter, his betrothed bride, Eudora Spencer, where he is to be "awake and woe," he solemnly exclaims, "I will."

throughout the work a many fashies of striking beauty and truthfulness, among which we may take the following:—Eudora is admiring with rapture a small bed full of beautifully-coloured flowers, when the enthusiastic Ælgiava remarks:—“And yet, Eudora, there is not a single flower to be found in that small group which does not grow in native richness and beauty upon the hills around your home. You are a type of the world, poor maid; in that which is common you see no beauty, and yet every flower which grows in the carol of the wind, and under us, from the little blossom of the moss, which comes from the winds, upon the granite rocks, to the magnificent orchids of our valleys, is cared by sacred agencies, which mould them into beauty; and from their heaven-sent leaves rise emanations, endowed with the power of surrounding the good with an atmosphere of divinity. The world rejects heaven's best blessings, and profanely pursues a phantom, invested with the name of pleasure, which proves at last the soulless selection of some painted vice.”

After a mental hallucination, in which Julian has been wrapped for months, in which has witnessed the progress of the creation of the world and its inhabitants, on his gradually recovering his wandered senses, he is made to say—“I roll to and fro like a man holding by a spar in the middle of a bounding ocean, a thousand times as fast as the frail ship of mortal man; and I am made to feel that I am a poor, puny wiser than the wise of this proud contempt! I have looked upon their little efforts to be useful. I have lifted myself up to a point beyond them, and I now stand on a pinnacle, fearful I shall fall. I feel—the derisive laugh of the multitude rings in my ears; the funeral knell of one who gave for immortality and lost it.”

HOLLOWAY'S PILLS, A SUPERIOR REMEDY FOR OLD COUGHS, RECENT CROUPS, AND ASTHMATICAL COMPLAINTS.—It is confirmed daily, by persons who have long been great sufferers, that these wonderful pills are an effectual cure for old coughs, recent colds, wheezings on the chest, shortness of breath, and asthmatical complaints. Such are the extraordinary powers of Holloway's pills that a few doses will give relief to the most obstinate cases of diseases of the chest, and those who have been afflicted for years, and found every other medicine useless, may, by a little perseverance and care, obtain a permanent cure. They are also an effectual remedy for hoarseness and complaints in the throat.—Sold by all druggists, and at Professor Holloway's establishment, Strand, London.

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unusual, he would save enough to enable him not only to buy two other young pigs for the succeeding year, but also to pay the rent of his plot of ground, so that the remainder of the pork, and the potatoes and other vegetables which he had for the use of his own family, were all his own. It is evident to what extent he was able to provide for his own and his family's comforts may be easily imagined. In addition to the employment of his own spare time, it also gave employment to his wife and children. The chief advantage of this was, that, in many cases, it enabled the parents to send the children for some part of the day to school. But it was also advantageous to the adventurers and the public. The miner, when certain of a sufficient supply of potatoes and other vegetables for his own consumption, was enabled to devote all his money to potatoes, and was adventurous in speculating the discovery of new lands, where high rates of tribute is generally given in such cases, and miners have frequently thus realised their luckiest adventures. If, for instance, a miner had reason to believe that, in a certain place not yet worked, a lode existed which would pay for the working, he would offer to try his luck, at a tribute of, perhaps, 13s. in 12. If his judgment was correct, for the month or two following the lode would be worked, and he would be enabled to pay the tribute, and to himself a claim to continue employment in the lode, which he might enterprise and ascertain might thus add to those already worked by the adventurers. If he failed, he lost his money and his trouble; but still he was not destitute, inasmuch as he had his potatoes and other vegetables, and his pig or pigs, to fall back upon. He was not thus absolutely dependent from month to month for subsistence upon his money wages, as he is too generally represented to be. It is true, that when a party of men have been employed by the way, for in the majority of cases, if they were to run the risk and fail, he would be rendered absolutely destitute by the loss of his time and the stoppage of his wages. It would be erroneous to suppose that the cultivation of the potato has been altogether abandoned. The prospect of its again succeeding, is likely to restore confidence in it, and it is probable that, in the course of a year or two, its cultivation will be successful, and that the present depression will be relieved. This will effect a great change for the better in the condition of the miner and his family.

was so unfortunate as stumble upon St. Just when all work was suspended in the parish. This I regretted, as I was anxious to witness the operations carried on in the respondents mines situated in this district, whose shafts, as it were, overhung the sea, and whose levels project far beneath it. The annual feast of the patron saint of the parish was being observed when I visited it. This ceremony is common to all the western parishes of Cornwall. In this instance it commenced on the Sunday, when the religious part of the ceremony was performed. For the three following days the parish was the scene of a miniature carnival. From 75 to 100 bullocks were slain for the occasion, which we estimate 5 lbs. of meat for every person—man, woman, and child—in the parish. Of course, during these days no work was done. Thursday would also be a *die non*. On Friday, some would go out to labour, but the great object would be to make a week of it. After this, the parish would return to labour and sobriety, and think no more of the saint until the next return of his festival.

The miners are by no means a long-lived class of men. Their employment is such that the strongest constitution will, are long, feel his pernicious influence, and break down before it. There are diseases peculiar to their work, which only a small proportion of the miners escape, provided they continue at it for several years. The two great exciting

causes of disease are impure air and climbing the ladders. The miners when at work are exposed occasionally to extremely hot blasts of particles of coal, but these are comparatively met with are carbonic acid, sulphurated hydrogen, and carbureted hydrogen. The first is the inevitable product of respiration and combustion. Sometimes as many as 600 people will be at work at one and the same time in one and the same mine. The respiration of so many in a mine, never too well ventilated, must soon contaminate the atmosphere. For many mines, too, be it remembered, are never without large numbers of people in them. The space of the galleries is small, and the temperature of the air is consequently very high. There are two atmospheres which the miners dread—the "cold drafts," and the "poor airs." Of the latter there is a modification known as the "hot poor air." They are constantly wet whilst at their work, and subject to great and sudden changes of temperature. At one moment they may be in a profuse perspiration, and at another subjected to a cold shower. The result of these conditions is that they are almost invariably liable to impure respiration and fatal diseases of the lungs. Two almost too common ailments a miner has worked under ground from his pale and emaciated look. Some of them attain a green old age, but these are almost invariably such as have abandoned their underground employment after adhering to it for years. If they pursue it for 15 or 20 years, the chances are that their average life will not much exceed 38 years. Even without the effects of the impure air, the work of the miner is so fatiguing that it is almost certain to superinduce serious disorders of the heart and chest. The heart is in a state of high palpitation when the miner reaches the top of the shaft, whilst the lungs are in violent exercise. It is no wonder, seeing that sometimes they have to climb ladders four times the height of St. Paul's. Dilatation of the bronchial tubes is a disease very common to them. In some mines machines have been invented to supersede the necessity of this laborious work of climbing up and down the shafts. In some mines, however, the ladders are not only to be used in perpendicular shafts. The want of space prevents men from here describing them. The miners are also liable to many accidents. They seldom fall down the shafts, most of the accidents which happen being the result of careless blasting. These are now

greatly provoked agitation by the use of the patent safety fuse. The present generation of miners are deplorably deficient in education. The number of those who can read or write is very small. But few of the rising generation attend any school, and the few who do, are not well attended, even at that. There are schools enough in the neighbourhood of the mines; but the children are in most cases put to work as soon as they are able to earn anything. At the Caradon mines I was informed that not one-half of the children could write, whilst not much more than four-fifths of them could read, even imperfectly.

The mining population of Cornwall is generally of the methodist persuasion. In many of the parishes the church is a small building. Many of themselves are office-bearers in their respective churches, which has a great effect in keeping the whole body in order; they attend church very regularly. I regret, however, to say that I did not hear the best account of the morals of the miners. Early marriages are very common with them. The number of petty crimes is very great, particularly in the west, but fluctuates very much.

I have been compelled, by want of space, to hurry over much on which I could have greatly enlarged. There are other topics—such as the “ficketing system,” by which the ore is disposed of to the smelters—to which I might have adverted, had space permitted, bearing as they do, more or less, upon the condition of the labourer in the mines; but I must postpone these for the present.

On the whole, I do not regard the condition of the miner as so good as that of the fisherman. The fitful nature of his earnings, and the gambling tendencies of his employment, begot, in too many instances, reckless and extravagant habits, which reduce

yearly receipts may be double those of the man employed in the fields. But, however, although he is a miser, he is not a miserly miser. Although not exactly misers, I cannot conclude this letter without a passing allusion to the workers in the china-clay pits, between Bedford and St. Austell. They are men who stray from the work district between these two points, to the degraded granite; the granite is not to be dug from the hills, but is to be potted in the pits, and is white as snow. The streams of the district are of the colour of milk, from the washings which flow into them. As a class, the people who prepare the clay are not well off; they are cleanly set, but their wages are generally low: whilst the house accommodation of the pits is not to be compared with that of the miserable huts, which the traveller never ceases to strown over the heathy plain.

GODOLPHIN MINING COMPANY.—Peremptory orders have been issued by the Master in Chancery, Sir George Rose, on William Frederick Hill and William Revell Vigers, contributories, for the payment by them severally of 1805*l.* and 200*l.* to the official manager, by the 25th February, 1850, towards the winding-up and discharge of the liabilities of this company.

DIRECT LONDON AND ECKETER RAILWAY.—The final settlement of the list of contributories in this company was proceeded with on Friday, by the Master in Chancery, Brougham, at his court in Southampton-buildings, Chancery-lane. After hearing counsel and solicitors, who objected, on the part of various allottees, that as the proceedings of the company were founded in fraud the subscribers thereto were discharged from liability, and all of which objections were overruled, the Master decided that all allottees upon the first list—namely, those who had paid the deposit and signed the deed, and all those upon the second list—namely, those who had not paid the deposit and signed the deed—were liable to be placed upon the list as contributories, which was then finally signed and settled. The third list, containing the names of upwards of 1000 allottees who neither paid the deposit nor signed the deed, has been disallowed, and they will be discharged from liability. The main question, involving the liability of the directors, remains to be determined.

ROYAL THAMES STEAM NAVIGATION COMPANY.—The winding-up of the affairs of this project, which was started in 1846, with a proposed capital of 25,000*l.*, in 2500 shares of 10*l.* each, was before the Master in Chancery, Sir George Rose, who appointed Mr. Wryght, of Basinghall-street, official manager, to wind up the affairs. The company was projected for carrying passengers and goods, on a new principle of patent paddle-wheels, between London-bridge and Hampton-court, and for letting out steamers on occasional excursions. Two separate calls of 2*l.* each were made in March, 1847, but very few persons paid the same, and the project was abandoned; and being now encumbered with liabilities, for which Mr. G. F. Sievers, the petitioner for its winding-up and managing director, is being sued, it is sought to wind it up.

THE BRITANNIA BRIDGE.—The floating of the second great tube of this bridge was to have taken place on Monday last; but an accident occurred, which compelled a postponement. At 10 o'clock, when all were at their posts on one of the great iron cables, reaching from the pontoons to the opposite shore, snapped asunder. On a careful examination, it was said to have been partially cut through by some miscreant; but it was subsequently stated to have been caused by the iron keel of a large vessel from Carnarvon passing over it. On Tuesday morning, a new cable having in the meantime been fixed, the operation was again commenced. At 11 o'clock, Messrs. Stephenson, Clark, Brunel, Bidder, Wild, and Capt. Claxton, ascended to the top of the tube, and gave the signal to "heave to," when the ponderous fabric was instantly in motion, and gradually passed out about 150 yards into the stream, with its end towards the tower. After a few vigorous heaves, the mass glided obliquely into its place—the operation occupying just one hour; and not a minute was then to spare; for so rapidly did the tide fall, that in a few minutes there was a space of from 8 to 10 feet between the water and the bottom of the tube. It will be about three weeks before the lifting commences—the masonry having to be filled in; and it is thought the successful floating may cause one side of the bridge to be completed for the passage of trains by Feb. should it be opened even in March, it will have been four years in operation; while the Telford Suspension Bridge was eight years before completed. The portion of the tubular bridge floated on Tuesday was 472 ft. long, and weighed 900 tons. The quantity of iron in the Telford Bridge, in proportion to the tubular one, is as 1 to 15. For floating the giant mass eight pontoons were employed, each 100 ft. long, 25 ft. wide, and 11 ft. deep, with a floating power of 3400 tons. Up to the present time there have been constructed in the towers 1,500,000 cubic feet of masonry, giving 3 cubic feet per minute since the commencement, allowing 12 hours to the day, and 6 days to the week.

BISCUITS MADE BY MACHINERY.—In the *Mining Journal* of October 13th is published a description of some machinery for manufacturing biscuits, working on the premises of Mr. Thomas Harrison, Liverpool. The principle, we are informed, is anything but new, as machinery was constructed many years since at the Royal Clarence Victualling Yard, Weevil, near Portsmouth, for a like purpose, and has been in use ever since. Government awarded to Y. Grant, Esq., a sum of 2000*l.* for the invention. For the first operation (grinding) there are in the establishment ten pairs of stones, by which 40 bushels of flour may be ground and dressed in one hour. There are nine ovens, each 18 ft. long, 11 ft. wide, and 17½ inches high; they are heated by a blast of hot air sweeping through them, which gives a sufficient heat in an incredible short time. A sack of flour, of 280 lbs., is then placed in the trough, with 13 silons of water; through the trough runs a shaft, having fixed on it, opposite each other, two sets of knives, of ten each, which revolving, mixes the flour and water into dough. This is then passed through immense kneading rollers, weighing 1668 lbs. each, moving horizontally, until it is in a perfectly homogenous state, and ready to be formed into biscuits. It is then conveyed to another part of the apartment, and passed under what is termed the sheet rollers, which press it out into the proper and uniform thickness. It is then passed forward beneath the cutters, a framework of cutting edges, which, at each operation, shapes 52 biscuits; this frame slowly rises and falls by machinery, and the attendant, watching his opportunity, slides each successive sheet of dough, from whence it is passed to the oven. A quarter of an hour is sufficient to bake them, and they are then placed in a drying room, at a temperature of not 90°, for three days, which completes the process. The quantity made in a given time by actual experiment was 1,578,400 lbs. of biscuits, in 769 working hours, or 77 days of 10 hours each; the wages for this period being 2*l.* 2*s.* while, for biscuits made by hand, they would have been 89*l.*

GUTTA PERCHA.—Two arrivals have taken place in one day of this novel and now universally applicable article of merchandise. The vessel *Anna Mary*, from Singapore, has brought 1704 packages to order; and the vessel *Gallarns*, from Singapore, has brought the very large quantity of 12,844 blocks and 10 packages of the article, also consigned to order.

The London and North-Western Railway Company have adopted the Guarantee Society as surety for the fidelity of their clerks and officers, and it is stated that nearly 800 policies have been required for the officials in London, and at various stations on the line.

MEETINGS DURING THE ENSUING WEEK.

PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY.

PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY.

JAMES MATHESON, Esq. (chairman of the board of directors), in the chair. There was a very numerous attendance of the proprietors present.

The CHAIRMAN said, they had now come to that stage in their proceedings when the annual report should be read, and he had great pleasure, on the part of the directors, in congratulating the meeting on the continuance of that high degree of prosperity by which the company had hitherto been so fortunately distinguished. But he would not detain them longer from hearing the secretary read the report.

REPORT.
In meeting you to present their ninth annual report, the directors trust that you will

A balance of net profit for the year ending 30th Sept., 1849, after providing out of the earnings the usual reserves for wear and tear, insurance against sea-risk, and depreciation, also for contingent expenses in replacing the *Hindustan* on her station in India, and bringing the *Bentick* from India for repairs, of £59,185 2 1

To which is added the balance of undivided profits from the previous year, as per statement presented 13th Dec., 1848 8,445 14 9

Leaving disposable for dividend, &c.	£86,270	5	7
Deducting from which the half-year's dividend to 31st March last, paid..	29,608	4	0

to be recommended, estimated so amount to.....	39,800	0	0
There will remain to meet contingencies, and to be carried to next year's account	2,600	1	0

THE RESERVE INSURANCE FUND.—The state of the company's income and expenditure for the last financial year has enabled the directors, as appears by the balance-sheet,

CONTEMPLATED EXTENSION OF THE COMPANY'S OPERATIONS AND CAPITAL.—An advertisement has recently been issued by the Government, again inviting tenders for establishing a steam-packet communication with Australia; and there is reason to believe that this important measure, so long, and recently so earnestly called for by the numerous and important interests of the colony, will be speedily carried into effect.

IMPROVEMENT OF THE TRANSIT THROUGH EGYPT.—The directors have much satisfaction in reporting that, through the deputation which, in the person of Sir John Pirie, they sent to the present Pacha, important improvements have been effected, and are in progress, by the aid of his Highness, for facilitating the transit of passengers and goods to and from Egypt. The Egyptian Railways, which have been introduced throughout the whole system; and by the means of these, and the use of additional locomotives and attendants, the land journey between Cairo and Suex (a distance of 84 miles), can now be made in 14, instead of 24 hours, in comfortable carriages.

Other improvements, introduced since the period in question, are—the erection of an enclosed wharf at Alexandria, with sheds and warehouses for India cargo and passengers' baggage. The numbering of all the boats employed in landing passengers, and the issuance of a ticket of a rate of charge, which is painted in each. The erection of extensive sheds and warehouses, and the construction of a new pier, with a large number of cranes, for the transport of cargo and baggage between the landing-place and canal. The addition of four new omnibuses for conveying passengers from the landing-place to the city, and thence to the canal. The erection of an enclosed wharf at the canal. A quay for the reception of the ships, each with a crane, and a new pier, with a crane, at the lower; also, two new track boats, capable of accommodating, each, 35 to 40 persons. The increase from seven to 10 horse stations between Alexandria and Aftah. The addition to the Nile fleet of a new steamer, with accommodation for 35 to 40 persons. The

the construction of new stabling and omnibus houses at Boulac, and of very extensive and commodious premises in Cairo, for the Desert stud and carriages, &c. The enlargement of the station houses in Cairo, in order to accommodate the increased number of carriages, and the system of travelling, and of constructing the newly-made carriages. The completion of the landing-wharf at Suez, and the projected enclosure, as at Alexandria and the progress of Meandering the sandy portions of the Desert road. The completion of the new stage coach and omnibus houses at Suez, and the new omnibuses now in use. Also two commodious canal steamers, which are now being shipped for Alexandria, and a large and commodious steamer for the Nile, which will be ready for sea the course of six weeks. These vessels have been constructed for his Highness, under

When the whole of these improvements are finally completed, the amount expended thereon by the Government will not be less than \$0,000. In addition to these improvements, the directors are about to press on his Highness the expediency of establishing an electric telegraph between Calcutta and Suva, which, besides other obvious advantages, will enable passengers proceeding to India, &c., to remain at Calcutta until the arrival at Suva of the steamer from India shall be telegraphed, instead of being forwarded to Suva to await her arrival, and being subjected there to an inconvenient detention, which has sometimes happened, and which, though not under the control of the directors, has been a source of much annoyance to the passengers.

The directors are also led to hope, that the time is not distant when a railway between Nile and the Red Sea will render this great thoroughfare of Oriental intercourse still more completely accessible, and their appreciation of his highness's exertions in effecting these improvements, the directors deemed expedient to express to him, in the name of the company, a carriage and two pairs of horses, with harness, &c. The following extract of a letter from the company's agent in Egypt, dated Alexandria, Sept. 21, describes the presentation and reception of it:—"I accompanied his Excellency Artin Bey, on the 10th, to the capital, and after having the carriage put up, &c., waited on his Highness at Pacha, accompanied by the head of the Transit Administration, Hereddin Pacha, and delivered the present and letter in the name and on behalf of the company, in presence of a large attendance of court officers and others. His highness expressed himself warmly indebted for this proof of the company's willingness to appreciate his intentions and labours for the improvement of the India transit, and requested me to convey to the board of directors my warmest acknowledgments and my judgment of their elegant and valuable present. In the course of a long conversation, he stated that the assurance given to Sir John Lubbock, that he would permit no reasonable grounds of complaint to remain unremoved," an official acknowledgment has also been received by the directors.

official acknowledgment may also be received by the directors.

—The result of the above is, that the committee of the House of Commons on the subject has fully confirmed the anticipations in respect to it which the directors expressed in their last yearly report. It has completely refuted the sinister reports, so industriously circulated, reference to the contracts entered into with this company; and, together with the circumstances connected with the termination and renewal of the company's contract for the conveyance of the India and China Mail between Southampton and Alexandria, has established the fact, that as regards the company's management, there is no ground to be shown, that, in the planning and executing of the postal communications in which the company is employed, important public improvements have been effected, combined with a financial saving to the exchequer; that, wherever practicable, the company has been placed in open competition with other parties; that it is indebted for these contracts solely to having placed itself, by its own enterprise, in a position to execute these services; that the company's management is so conducted, that the services it is required to perform are still fully capable of maintaining that position, both in respect to the service in which it is now engaged, as well as in the undertaking of any further services which may be

APPOINTMENT OF A MANAGING DIRECTOR.—In accordance with the intention implied in the above clause, the directors have, by virtue of the power vested in them under the Deed of Settlement, appointed Mr. James Allan to the vacancy in the committee of management, caused by the decease of Mr. Francis Carleton. In fixing Mr. Allan's emoluments, they have deemed it advisable to adhere to the principle on which the remuneration of the original managing directors was arranged—namely, that the identifying the personal interest of those on whose skill and exertions the prosperity of the enterprise must so essentially depend, with the interest of the proprietors. In accordance with that principle, Mr. Allan will be paid by a per centage on the net profits of the company; the one-third of the net amount of the commission on receipts and profits, as formerly received by the late Mr. Carleton, being accounted for and paid over to the estate of the deceased proprietor, and the balance being paid to Mr. Allan, as recommended by the two surviving original managing directors—Messrs. Willcockson and Ardington.

ELECTION OF DIRECTORS AND AUDITORS.—By the conditions of the Deed of Settlement two directors, and also the two auditors, go out of office this day, and the proprietors are now called upon to fill up the vacancies thus occasioned. The outgoing directors by ballot, M. De Zulieta and Mr. Hadow, and the auditors, Hon. J. T. T. Leslie Melville and Mr. Hunter, being willing to serve again if re-elected, and being under the terms of the Deed immediately re-eligible, the court cordially recommend these gentlemen to your choice.

DIVIDEND.—The directors now recommend that a dividend of 4 per cent., clear of income tax, for the half-year ending 30th September last, be declared, and be payable on and after the 22d inst.

PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY'S FLEET.

SUEZ AND CALCUTTA SERVICE.			
<i>Hindostan</i>	Tons	1800	530 Horse-power.
<i>Bentinel</i>	"	1800	530
<i>Precurator</i>	"	1600	500
<i>Haddington</i>	"	1500	500
<i>Oriental</i>	"	1600	500
BOMBAY AND CHINA SERVICE.			
<i>Pekin</i>	Tons	1180	430
<i>Achilles</i>	"	1000	420
<i>Malta</i>	"	1225	450
<i>Braganza</i>	"	800	280
<i>Lady Mary Wood</i>	"	650	260
CANTON LOCAL SERVICE.			
<i>Canton</i>	Tons	400	150
SOUTHAMPTON AND ALEXANDRIA SERVICE.			
<i>Indus</i>	Tons	1400	450
<i>Ripon</i>	"	1800	450
<i>Pottinger</i>	"	1400	450
CONSTANTINOPLE AND BLACK SEA SERVICE.			
<i>Sullan</i>	Tons	1100	400
<i>Euxine</i>	"	1100	400
<i>Tagus</i>	"	900	280
<i>Erin</i>	"	850	280
PENINSULAR AND ITALIAN SERVICE.			
<i>Montrose</i>	Tons	450	240
<i>Iberia</i>	"	600	200
<i>Pacha</i>	"	600	210
<i>Jupiter</i>	"	600	260
<i>Madrid</i>	"	500	160

Mr. GLENNIE, in moving that the report read be adopted and circulated, said that he had the more pleasure in doing so because he felt confident that there was no individual amongst the great body of their proprietary who did not believe that the board of directors, by whom the management of their affairs was administered, was entitled to their most implicit confidence and gratitude. In accordance with a resolution passed at their last meeting, a statement of the accounts of the concern was laid before the proprietors, and he was happy to say that they were of such a nature as to suggest feelings of the liveliest satisfaction amongst them. In reference to the reserved assurance fund adverted to in the report, he was happy to be able to inform them that there was a probability of the production of a bonus next year, and he mentioned that circumstance merely as an illustration of the care and wisdom which their directors brought to bear upon the consideration of every new engagement and mode of proceeding before calling on the proprietors to give their sanction to them. Every step which they had heretofore recommended for adoption had been attended with the most successful results; and he perceived that at present an extension of the company's field of operation was in contemplation, which he had no doubt would be carried out with the same sagacity and success which had brought their affairs into the flourishing condition in which they were. If they went on, he had no doubt they must succeed, and he sincerely hoped they might go on, if only for the purpose of giving him, and those who now the position of the company an opportunity of investing more money in it. It would be seen that they recommended that there should be no preference shares—a recommendation in which he heartily agreed, as it would be admitted that there was nothing more subversive of cordiality in a partnership than that while some persons were receiving two per cent., others, more fortunate, were getting five per cent. From personal experience and knowledge, he could bear testimony to the exertions made by the directors of the company to surround the route to India with such facilities and appliances as would necessarily induce travellers to take passages in their vessels. Having expressed his approval of the recommendation included in the report, respecting the reelection of the outgoing directors, he concluded by moving the adoption of the document, and reiterating his opinion, that a perusal of it must infuse the most unbounded confidence in the managing directory into the minds of the shareholders.

DR. BEATTIE seconded the motion, and congratulated the meeting on the highly satisfactory nature of the arrangements, which had been entered into by the directors, with a view to facilitate the transit of passengers and goods to the East. The late accounts from India were calculated to induce the belief that the time was not distant when the export duties would be removed; and there was no doubt that then, with a railway across the Desert, a traffic could be created, which must be of great advantage to their undertaking. He concluded by stating, that a careful examination of the accounts which had been drawn of the transactions of the past year, had convinced him that their affairs were in a most satisfactory condition.

Gen. BRUGES begged leave also to bear testimony to the admirable manner in which their accounts were kept, and the gratifying results exhibited by them, but there were one or two points respecting which he would ask for explanation. They were all aware that the visit of Sir John Pirie and its results had been of vast importance to the company, developing, as it had done, the remote contingency of a railway and telegraphic connection between Cairo and Suez, and inducing a vast improvement in the modes of travelling and communication previously existing. (Hear, hear.) They were not, however, aware of the exact inducements which had been offered to or accepted by the Khedive of Egypt to exert himself as he had done for facilitating intercourse within his dominions. Perhaps he received some profit on the transmission of passengers or goods throughout his country; but if such were the case they could be informed of its amount, or the nature of the inducement. He commented the directory on the eligible investments which they had made of the surplus funds belonging to the company, which, he was happy to see, amounted to a much larger sum than was originally subscribed.

Mr. A. ANDERSON, M.P., in reply to the query of Gen. Briggs, stated that the company paid the Pacha 30,000*l.* a year for the transit of passengers and goods; and it was only just to his Highness to state that, considering the constant expenses to which he was subject in keeping up the system of intercourse established, and the large original outlay incurred by him, the sum allowed by the company by no means reimbursed him, but he had taken an enlightened view of the means by which he might advance the interests of the country over which he was the ruler. He was aware that intercourse with other countries had added to the resources, the refinement, and the civilisation of his own; and, in truth, the district was getting so much Europeanised, that were it not for occasional glimpses of strange or picturesque costumes, the traveller would not suppose his journey lay through a foreign land. The Pacha received 12*l.* for each passenger conveyed from Alexandria to Suez, and a small *ad valorem* per centage (14 per cent. we understood) on the goods' traffic. On the other hand, he had to defray the charge of steam-boats on the Nile, &c., the expense of a staff of officials on the route across the Desert and at the terminal ports, station-house in the Desert, and many other items of outlay which he believed in the aggregate very much exceeded the 30,000*l.* which was paid by the company.

The report was then unanimously adopted. The CHAIRMAN said that a proposition had been made by the board of directors, which had been adhered to at the last meeting, to present Sir J. Pirie with a testimonial for his services to the company in Egypt. Sir J. Pirie, however, from a sense of delicacy, wished that such a proceeding should not emanate from his colleagues in the direction, who, therefore, took that opportunity of placing the matter in the hands of the proprietors, and calling on them to deal with it as they thought fit.

Mr. MORRIS pronounced a high eulogium on the indefatigable zeal which Sir J. Pirie had displayed in behalf of the company, and took occasion to contrast the comfortable travelling arrangements in the east under the old régime, with the comforts of the present system, which had been introduced principally by the exertions of Sir J. Pirie, to whom the company and the public owed a debt of gratitude which it would be difficult for them to repay. He concluded by proposing that a sum of 250*l*. be allotted to the directors to appropriate to the securing such a testimonial to Alderman Pirie as might be most gratifying, being at the same time understood that the sum named was not by any means measure of his services, but merely a recognition of them.

Major MOORE seconded the resolution, and moved in complimentary terms the services rendered to the company by Sir J. Pirbright.

Several shareholders, however, objected to the smallness and inadequacy of the sum proposed, and an amendment was proposed to the effect that 500*l.* be allocated to the purpose. This proposition having met with universal assent, Morris altered his resolution accordingly, and it was unanimously recommended, amid loud cheering, that a sum of 500*l.* be devoted to the purchase of a testimonial to Sir J. Pirbright. The outgoing directors, Messrs de Zulsteta and

A dividend of four per cent. for the half-year, free of income tax, was declared, and the proceedings were brought to a close with a vote of thanks to the chairman and board of direction, for the zeal and ability with which they administered the affairs of the company, which was carried by acclamation.

SOUTH AUSTRALIA.—We learn, from a correspondent, that mining is looking somewhat better in the colony, in consequence, it is presumed, of the rise in copper. Nearly 20 tons of ore, making a produce of 80½ per cent, have been sent from Lyndoch Valley Mine. The Paringa proprietors are letting their lands for mining at 1-15th dues; while, it is said, the South Australian Company are asking 3-7th, but this they will never succeed in obtaining.

We learn from the papers, that "the wonders of the Burra Burra seem daily to increase. The 20 fm. level was far superior to the 10 fm. level; and now it appears the 30 fm. level is far superior to the former, and exceeds the most sanguine anticipations of the miners and of the association.

"The Copper Patent Company are at last in full operation at the Burra Burra Mines. Twelve dray loads of copper are on the way to Adelaide, as a commencement, and the exports of copper may henceforth be expected far to surpass in value the exports of copper ore, during any equal period, from these celebrated mines.

"In the absence of other business, the Yatala Smelting Company have commenced manufacturing copper wire, a specimen of which, of superior quality, may be seen at the Exchange."

It is stated that "the success of the Enterprise Mining Company at Lyndoch Valley bids fair to be complete. Small samples from the bulk of ore raised (not merely mineral specimens) have been exhibited at the Exchange and elsewhere in Adelaide. The malachite and muriate of copper closely resemble similar species from the Burra Burra Mines; and one assay, by Capt. R. Davey, yielded 52 per cent."

THE NEW GOLD REGION.—On the 24th November we mentioned the receipt of advices from Bolivia, giving an account of the discovery of a gold region in that republic, on the eastern side of the Andes, about seven days' journey from the city of La Paz; the deposits, which are of a similar character to those in California, having been detected in the first instance by an Indian, on the banks of a small stream. In those letters it was stated that upwards of 8000 persons had already left La Paz for the scene of operations, and subsequent particulars have now arrived, from which it appears that the produce of gold was daily increasing, that numerous expeditions had started from Arequipa, in Peru, and even that several quintals of the metal had been brought down to that place. "The situation of these works (it is said) is on the east side of the Andes, and the gold is found in the rivers that take their descent thence. Every one considers them a second California, with the difference that the gold is of better quality, and that the mad speculations carried into practice in California are avoided here, and a better system adopted, owing to the enforcement of the usual mining regulations of the country. It must be borne in mind, that all these are comparatively new fields for enterprise. Every day fresh and more important discoveries are making."

CALIFORNIA.—The following letter has been addressed to the *Times* :—

San Francisco, Sept. 30.—The rapidity with which this place is rising into a great commercial city is wonderful. Not many months ago it was scarcely dotted with huts, and now it is a city of 250,000 inhabitants, with an indolent existence, without trade, energy, enterprise, or resources; the "circulating medium" so scarce as to be a curiosity, rather than an engine of commerce, and having little intercourse with the rest of the world. The transformation, from its suddenness, seems magical. The building of houses of every imaginable shape, size, and contrivance—of shops, warehouses, and stores—of wharfs, jetties, and the like, is pursued with an energy that reminds one forcibly of the founding of St. Petersburg. There are at present in the bay and port of San Francisco about 250 fine merchant vessels, representing 94,344 tons of sailing and steam tonnage, and 100,000 men are employed in the city and harbor. There is such a constant influx of goods, of which a great proportion is unsuitable to the wants of the people, as keeps the market in a continual glut. The same remark applies to the two chief inland cities of Stockton and Sacramento. The consequence is that frequently whole cargoes are sacrificed. Preserved meats, fruits, vegetables, and pickles, sell remarkable well, as does lumber. Frame houses are now so abundant that the price has fallen at least 45 percent. Lumber being plentiful, and there being now sufficient hands to work the planing-mills, the building houses to order is much preferred to buying ready-made ones. The *San Francisco Mining Journal* of last week, the great explorer of this country, and whose travels across the Rocky Mountains are well known. The gold has been found imbedded in a matrix of gray quartz, in a rock of great extent. This gold, which is of fine quality, intersects the rock in filaments fantastically shaped, running chiefly in horizontal and irregular lines, and is found not far under the surface. I saw a specimen of this rock and a bullet of pure gold, with Colonel Fremont, a couple of weeks ago. The first was a flat slab broken off the rock with a hammer. The gold intersected the stone in lines, that gave it a wavy, undulating appearance. The second was a bullet of pure gold, which the Colonel had formed into shape by an Indian, who first smashed the quartz with a hammer, picked out the gold particles, and shaped them into a ball or bullet by beating. Colonel Fremont intends to apply machinery to break the superincumbent rock, and to apply quicksilver for the purpose of extracting the gold. The discovery of this extensive deposit of gold, in the mountains of California, is a great event. The gold mine is on the banks of the Mariposa, a creek of the Merced River, which latter is a tributary of the San Joaquin River, which empties itself into the Bay of San Francisco. The mine lies 90 miles due south from the city of Stockton, in a hilly district, and is easily accessible by land, and can be approached to within a short distance by water, by small steamers, as I hear. The vein of rock in which this gold has been discovered has been traced for a distance of a mile, and hopes are entertained that its extent is much greater. The discovery had excited the cupidty of the Indians, who have been seen digging for gold, and have been killed by the whites. From the spot two Americans had been murdered by the Indians. On this intelligence reaching him, the Colonel applied to General Riley, the Governor of California, for assistance to keep the Indians in check, as he intends to prosecute his mining operations with vigour in this new field of "gold-digging." Gold digging is now beginning to be prosecuted in a more scientific manner than hitherto. On Mormon Island, one of the earliest scenes of the gold discovery, unimproved machines are at work; and, although the whole surface has already been washed" by the shovel and pan system, and the surface of the island has been so completely denuded, that the diggers are obliged to dig down to the bed-rock, and to process considerable quantities of gold in order to extract from the refuse sand and soft loess by the diggers as fruitless. I have seen a lot of gold, and happen to know that the plan answers well.

to ague, and happen to know that the malady is well known to the miners of the country the miners are attacked by scurvy, from the want of vegetable diet, being obliged to live chiefly on dried beef and biscuit. Fever and ague, accompanied by dysentery, also prevail to a great extent. The two cities of Sacramento, on the river of the same name, and of Stockton, in an opposite direction, on the San Joaquin, are generally very healthy, but almost every person who comes from California to either of these cities is in the first stages of the fever and ague and dysentery. The former cities are very hot, while here the temperature is cool, but extremely variable, and from the great number of deaths amongst the inhabitants, I am forced to think very unhealthily, notwithstanding its boasted salubrity by all who have written upon the country.—Price of gold dust has run during the month from \$15 25 c. to \$15 50 c., and is exchanged for coin at 5 per cent premium. Coin is in great demand, and is in a symmetrical condition of circulation, and the principal article of commerce in the hands of the people. A single body of gold represents a great business interest.

A parcel of California gold, assayed and coined at the Philadelphia Mint, gave the following product:—The quantity amounted to \$25,000, and the fineness varied from 880½ thousands to 889 thousands; that of the silver, 996 to 112 thousands. The weight before melting was 1,408.71; after melting, 1,366.05; value in gold, \$25,012.46; value in silver, \$189.99; deduction for seignior and alloy, \$59.99—net value, \$25,143.16.

A box of gold-dust, directed from San Francisco to New York, has been shipped with an augur, by some ingenious and curious rogue, and \$10,000 worth abstracted from it.

Mr. W. R. Walker, a representative to the Alabama Legislature, from Tus-
 egee, had given notice that he would, early in the session, bring forward a
 bill authorising the State to purchase 100 negroes, to be sent to California, to
 work in the gold mines, the profits of their labour to be devoted to the pay-
 ment of the public debt of Alabama.

MINING IN MEXICO.—A decree has just been published in Zacatecas, dated the 24th September, in virtue of which no extra duties, or extraordinary tax, can be levied on mining enterprises under any pretext whatever. In order to encourage mining, it is likewise provided that, on any new mines being worked by steam-power, or other machinery, no duties either on the produce of silver or on the consumption of articles in the undertaking, shall be levied for the first 10 years; and that in mines already in working, whenever there shall be an augmentation of two-thirds in the number of labourers employed, the duties paid at present on silver shall be reduced one-sixth, and on all articles of consumption one-half.

CHILLI—From Valparaiso, the accounts of the 30th September state, that copper in bars was quoted at 14, copper ore at \$50 to 55 per cent. at 4, and nitro do 20 to 25 per cent. at 2 25; Pina silver \$35, and silver in bars, at 10 12. At Lima the quotations were, 6 gold in bars, 1 real quite and 6 per cent. premium; silver in bars, 10 12 2 rs. on board. At Copiapo a railway had been projected, by Mr. Wetherlight between that place and the port. A company, to consist of only 16 shares, at \$50,000 each, had been formed, and at the first meeting 14 shares, or \$700,000, were subscribed for.

From Canada we learn that serious troubles have taken place in the mining districts on Lake Superior, arising out of the difficulties between the Chippewa Indians and the Government; or, as another account represents, the trouble is owing to the Quebec Mining Company having refused, or being unable, to pay the Indians for the land they had purchased of them. The Indians can muster 1000 warriors, 300 of whom, and 30 whites, with 3 pieces of cannon, are on their way to the mines; and 100 soldiers, with artillery, have been ordered from the nearest station to the scene of hostilities. The military department are making formidable preparations.

According to an Imperial ukase, dated the 23d of November, the exportation of gold and silver, which has been prohibited since May, 1843, will again be allowed from St. Petersburg on and after the 13th inst. The navigation will then be entirely closed, so that the shipment of specie will be impossible, but the existing rate of exchange being 37 5-16d. to 37 3/4d., there would be a considerable profit even in sending it overland, and the arrival of considerable sums may, therefore, be expected.

The Compendium of British Mining.

BY J. Y. WATSON, ESQ., F.G.S.

TINCROFT TIN AND COPPER MINING COMPANY.—In 5000 scrip shares, passing from hand to hand without transfer; price 12s. per share; dividends paid this year 2100s., or 7s. per share, being under 5 per cent. The mine belonging to the company is very extensive, and with powerful and efficient machinery. The quantity of ore discovered is estimated at above 80,000s., and it is fair to presume that much larger dividends will be paid in future—the large outlay made on the mine now coming into profitable play. The mine is situated in the midst of the richest mines in the county of Cornwall.

CONDURROW TIN AND COPPER MINING COMPANY.—(For general statistics, see *Mining Journal*, May 12, 1849.) In 256 shares; price 80s. to 90s. per share. Condurrow is a mine upon which a large outlay has been made, and is now coming into profitable working, with great prospects of continuance. Only one dividend has been declared, which amounted to 3s. per share; another of like amount is shortly anticipated. There is an impression abroad, that greater returns could, and ought to, be made from this mine.

LEVANT TIN AND COPPER MINE.—In 160 shares; price 170s. per share; has paid this year 40s. per share dividend, or more than 20 per cent. This mine is one of the oldest, and has been one of the richest in Cornwall.

WEST PROVIDENCE TIN MINE.—In 256 shares; price 30s.; paying dividends quarterly, at the rate of 8s. per share per annum, or more than 25 per cent. The dividends paid this year amount to 8s. per share—the last being paid in October.

[To be continued in next week's Journal.]

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—The shaftmen were engaged all the week fixing the new plunger-lift, and completed it on Saturday last; it answers very well. This morning the water was drained at the bottom of the mine, and now we are in position to resume the driving of the 60 ft. level. The shaftmen will be engaged fixing the drawing-lift under the 60 ft. level; this being done, we shall be able to sink the shaft, and drive the different levels in regular order. You will see from this that there is nothing done in the shaft or driving of the levels at the bottom of the mine since my last report.

BARRISTOWN.—The lode in the 18 ft. level, west end, is looking better for ore than last reported; it is now producing from 8 to 10 cwt. of lead per fm. We have driven 4 fms. on this lode, and it has been very regular, with a better appearance of lead in the bottom of the level; in stopping the back of this level the lode looks much the same as last reported. The lode in the 24 ft. level, at Kila shaft, is much the same as last reported, principally blende, mixed with lead. The stopes in the bottom of adit level, west of the adit, is still producing some ore, but poor.

BEALBURY (COPPER AND SILVER).—The open cutting and adit is now cleared upwards of 100 fms. to the engine-shaft, which we shall proceed to timber up immediately in readiness for the engine; and as soon as the timber is raised we shall be able to raise ore in the 30 ft. level, where it was seen at the last workings. We intend opening a cross-cut from the adit level to the silver (or cauter) lode, where it is very large, with some promising appearances, and in similar strata to the rich lode in Wheal May, not far distant. In the cauter lode, silver was seen at the last workings, and we fully expect some valuable discoveries will soon be made here. Several branches have been seen in the adit level, dropping into the lode at a greater depth, of a highly promising character, and, according to the unanimous opinion of the respectable agents who have inspected the mine, it will prove a most valuable property.

BEAM (TIN).—We will continue to raise and sell tin of excellent quality from this mine. I perceive that the price of the best tin sold from Great Polgoth, at their last sale, as stated in your Journal of last week, amounted to 41s. 6d. per ton. Great Polgoth is well known for the great quantity of tin raised, and for the good quality of it as common mine tin. The black tin sold from Beam Mine is fit to make "grain" tin, commonly called in our tin hills "sell" tin. Our best sample, which was sold to Messrs. Danzab, St. Austell, on 30th Nov., brought 55s. per ton, which will be received to be 13s. 9d. per ton above the good tin at Great Polgoth, and 13s. 10s. per ton above the very best of Alsburton United tin, as stated in the *Mining Journal* of 24th Nov. The tin from Beam Mine never wants burning before it is carried to the smelting-house, as is very common with a great quantity of tin raised in mines. I received for 4 tons 4 cwt. 3 qrs. 34 lbs. of tin sold from Beam Mine, on the 30th Nov., which brought 12s. 6d. per ton, for leaveings, tin, and altogether, 50s. 10s. per ton, while the average price of Great Polgoth for 52 tons 10 cwt. is about 41s. 5s. per ton. I received per ton, on an average, for tin from Beam Mine, over and above good mine tin, 9s. 5s. per ton. Suppose we can raise from Beam Mine 40 tons of tin per month, which I have no doubt can be easily done when the new shaft is sunk, as marked on the plan, and described in the prospectus (and a larger quantity than that, if required, may be raised), that will amount to 370s. per month, over and above the average price on 40 tons of good mine tin, without any extra labour, and it is only a matter of time before this mine will be represented to be very good.

BEDFORD UNITED.—The lode in the 103 ft. level, east of the engine-shaft, is producing good stones of ore; in the 103 ft. level, east and west of Barley's winze, there has been no lode taken down. The winze in the 80 ft. level has been communicated to the rise, and we have resumed driving the 90 ft. level, in which the lode is 18 in. wide, saving work. We have commenced sinking a winze in the 90 (about 18 fms. east of the cross-course) in the 80 ft. level, and will yield 4 tons of ore per fm. We are still driving by the side of the lode in the 70 ft. level east. We weighed at Mr. Williams, on Friday last, Sept. 9, 119 tons 13 cwt. 2 qrs., and sampled Oct. 9, 120 tons.

BLISLAND CONSOLS (TIN AND COPPER).—We have intercepted a branch of elvan in our adit, and have gone through it, it is 2 ft. 8 in. wide, apparently without underlying; the ground on the other side is easier of working, and we are getting on with all speed. I consider it a great advantage having the elvan course in the granite, as it is a good sign, and most productive tin lodes have it. We shall finish our wheel this week, and I can assure you that the carpenters and masons have made a good job of it. I hope next week you will be down to set it going, so that we may lose no time in sinking our engine-shaft and bringing tin to market, which we shall now speedily do. The 9-inch pumps ordered will be fully sufficient to keep the water. Capt. Williams was here last week, and inspected the mine for some time.

BRYN-ARIAN.—The lode in the 10 ft. level driving west from the engine-shaft is still disordered, although at times we have good stones of lead ore from it; the cutting down of the south part of the lode left standing in the rise over the back of the 10 ft. level, east from the shaft, still continues, and will yield 1 ton of ore per fm. The stopes east and west of the winze, under the deep adit level, will each produce 15 cwt. of ore per fm.; the stopes in the back of the deep adit level, east from the shaft, are up to the old men's workings; therefore they are suspended for the present, until we clear away some attle and debris, which will take a fortnight to do from this time. The lode in the adit level east from the shaft is improving; we have had fine stones of ore from the lode within the last few days; the stopes in the back of this level, west from the shaft, will produce 8 cwt. of ore per fm.; the 10 ft. level east produces 1 ton of ore per fathom.

CALLINGTON.—At the north mine, the ground in the 125 ft. level cross-cut continues much the same for driving as last reported. In the rise in the back of the 112 ft. level, north of the lode is producing silver-lead ore; in the 112 ft. level, south of the lode will produce from 8 to 10 cwt. of silver-lead ore per fm. level. The 90 ft. level is opening good tribute ground; the back of this end is working at 8s. in 12, and the men getting fair wages. The diagonal shaft, sinking below the 80 fathom level, is now down about 7 fms. below the latter level. The 70 ft. level east, on Kelly Bray lode, will produce 1 ton of copper ore per fm., the lode being about 1 1/2 ft. wide, composed of spar, peach, mandle, and copper ore. At the south mine, in the 125 ft. level, south of the lode is at present small and unproductive. In the 112 ft. level, south of the lode are opening tribute ground. The 112 ft. level is still disordered by the cross-course, we sampled this week computed 51 tons of rich silver-lead ore, samples of which are forwarded to different smelters.

CAMBORNE CONSOLS.—Our prospects in the silver lode, in the 20 ft. level, are still very satisfactory; for while the end has been producing some excellent silver ore, the back (which we have commenced stopping by two men acquainted with the nature and quality of the ore, and the matrix in which it is found), have been opening upon a fine bunch of silver ore, accompanied by native silver, and we have a good pile of it to draw to-morrow. Although it was all new to us, and we had to make various preparations for dressing, we are in this respect progressing very well. To-morrow, or the following day, we shall complete temporary erections for dealing with the cobbed, or secondary ore. In the process of dressing silver ore, and especially such as ours, it is necessarily scattered in such a way, so that it is not easy, perhaps, to estimate the quantity; however, I may venture to call that which is now at the surface, and will be ready for sale, I hope in about a fortnight, from 2 to 4 tons, and I hope there will be no occasion to complain of the quality. After this, I hope to effect monthly sales. The 40 ft. level, upon the silver course, is yet unproductive, and may be expected to continue so for 10 fms. more, to drive which will probably take about three months. You will perceive, by the working plan forwarded this morning, that these levels, as they reach the several copper lodes therein delineated, will unwater and drain them to the depth of 80 fms., so that (connected with these levels) notwithstanding the silver lode is a primary object, the draining through it, of the several valuable copper lodes, already discovered, is a very prominent one. Our cauter lode continues to produce very fine stones of ore, and gives out a quantity of water; in short, all who have seen it quite agree in the opinion that it will be productive of vast quantities of ore between the adit and the 40 ft. level, and we shall, in a comparatively short space of time, drain it to that depth. Upon dialling on Monday last, I found that it had taken a more westerly course than I was aware of. Recently the run of it has only been from 6 to 15 degrees north of west, whereas previously it was from 20 to 30 degrees; this circumstance accounts for not having reached the intersection of Tyndale's lode, and it will yet leave us some fathoms to drive. I have, therefore, determined upon pushing out a level north at the adit, to cut both that and the south End lode upon the cross-course running by Tyndale's shaft; and, judging from the appearance of the lode about 12 fathoms from the surface in that shaft, we may reasonably calculate on meeting with quantities of copper ore above the adit level. It will not take, perhaps, beyond a month, if so much, to cut the first lode, and the expense will only be from 15s. to 25s. An assay office upon the mine is requisite, at the present moment, for testing, as often as possible, the different varieties of silver ore which we daily meet with, and it will be most essentially so upon reaching the productive ground in the 40 fathom level; the expense will not be much, but I have directed an estimate of the cost to be made, which shall be forwarded to you shortly, that you may consider the subject. I should, however, inform you that, besides the inconvenience of sending off specimens to be tested which we are frequently obliged to do, the charge for them in the aggregate becomes of some consequence; and as we are conversant with the operation, a small outlay would save it, and afford us facilities for dealing with our silver and copper ore which we do not possess.

CARADON UNITED.—The engine-shaft is down 6 fms. 3 ft. under the 50; the hard ground from the south part of the shaft is still increasing on us; the lode is now quite gone through the shaft. We have a fair channel of ground between the lode and the hard ground in this shaft. 4 ft. wide; last month we sunk 1 fm. 5 ft. 6 in.; we had to change a working barrel, and to do several other jobs in the shaft, which threw us back a little. On this hard wall that is coming out on us, we find some good portions of yellow copper ore, and also portions of malleable copper. In the 50 south we drove last month 1 fm. 3 ft. at 10s. 10s. per fm., and 3 ft. at 12s. per fm. We are still giving 14s. per fm. for the shaft, and 12s. per fm. for the cross-cut.

COURT GRANGE.—I am still enabled to send you cheering accounts from Court Grange; there is a good course of ore in the bottom level westward, of the sort of which I sent you a sample. There is also a good course of ore eastward, but a little mixed with blende. There are a great many tons broken down to a state fit for crushing, and the mill is getting ready as fast as possible—the pillars are built, and I think the machine will work on Wednesday next. I have to-day marked out the lines for the flooring. At Liettyn-hen we have good ore in the western end; we cannot drive eastward for some days. We intend to make a push to get this mill ready with the utmost dispatch, and be well into returns in December; but we will write you when we can send off the sample of a parcel of ore.

CWM ERFIN.—The engine-shaft, from the 20 ft. level to the 90 ft. level, is down 6 ft. The stopes over the 20 ft. level, 10 fms. east of engine-shaft, is worth 7s. per fm.; the stopes from 20 to 30 fms. east is worth 8s. per fm.; the stopes from 30 to 40 fms. is worth 12s. The winze under the 20 ft. level, 25 fms. east of engine-shaft, is worth 6s. per fm. The 30 ft. level, east of engine-shaft, is poor; the 20 ft. level, east of Robert's winze, is worth 20s. per fm. The stopes in Robert's winze, over the 20 ft. level, is worth 20s. per fm. The 20 ft. level, west of Robert's winze, is worth 15s. per fm. We are at present dressing at the rate of 20 tons per month; but as soon as we can get the 20 ft. level through the east of Robert's winze, our returns will be much larger, and our cost will be not more than I have been 1 hour to get that piece of ground through in three or four weeks, as there are but 6 fms. to cut.

DAREN.—Nov. 29.—We are now cutting open the level Cood adit to prepare it for railroad to bring out the stuff from the mine, which is now very costly; but will then be delivered to the crusher at a moderate cost. The ore ground, both in level Cood and the middle adit, is very good, and will leave a good profit on working. Of its extent at present, we cannot speak decidedly; but, taking the height from level Cood, there are 80 fathoms of backs. I suppose that we have broken in the mine about 10 tons of ore, worth, at present price, 150s., or something more.—Dec. 5.—The stopes in Daren are looking very well in the shallow adit level. The men that were stopping in the level Cood are now driving a cross-cut towards Cwm Synogol lode. As soon as the machinery erected in the mine shall be able to do a good many tons monthly; I wish this was now the case, as lead is now bringing a good price.

DEVON AND COURTESAY.—The lode in the end driving west, in the 40 ft. level, is still divided, having a horse of killas in the middle, mixed with veins of lead ore, white iron, and spots of ore. In the end driving east, in the 50 ft. level, on the govan lode, the lode at present is not more than 1 ft. wide, composed chiefly of spar, at the same time producing, in some places, good stones of ore. The stopes are progressing with sinking the engine-shaft as fast as possible—ground at present rather hard. The pitches continue to look well.

EAST CROWDALE.—Since my last the 28 ft. level east has improved, it is now worth 12s. per fm.; the lode is 5 ft. wide, with a good leader on the south wall. No alteration since my last in the 28 ft. level west; still producing good saving work, worth 8s. per fm. The tribute pitch, in the back of the 17 ft. level, is also producing fair work, and the men are getting wages. Our tin for November will be from 3 to 4 tons, and we may cover the month's cost if our prospects continue, and we shall make profits on the two months of November and December. Inclosed you have the sale of the copper ore.

EAST TAMAR CONSOLS.—The engine-shaft is sunk 2 fms. 1 ft. under the 80 ft. level; the ground is more favourable for sinking, and the lode in the bottom much improved; it is now 3 ft. wide, with a branch, 10 in. thick, of good work. In the 80 ft. level, the lode in the south end is 3 ft. wide, very easy for driving, but at present yields only a small quantity of lead. In the 70 ft. level, the lode in the south end is 3 1/2 ft. wide, composed of tender can, and worth 6 cwt. of lead per fm.; this end has been extended 8 fms. 3 ft. during the past month, and the lode has yielded, on an average, 7 cwt. of lead per fm. for the whole distance; in the north end, in this level, the lode is 4 ft. wide, and worth 8 cwt. of lead per fm.; this end is an ancient unwatered ground, and more productive in the 70 ft. level. The stopes in the back of this level are suspended, and the men placed to rise against a winze, partly sunk from the level above. In the 60 ft. level, the lode in the south end is still in a disordered state, but the water is issuing freely from the bottom of the end, and we, therefore, expect an almost immediate improvement; in the north end, in this level, the lode is 2 1/2 ft. wide, worth 9 cwt. of lead per fm., and likely to continue equally productive. The tribute department is looking better than usual, and affords a fair prospect of our being able to increase the returns. The ore sold lately to Mr. Thomas Somers was shipped on Thursday last, and weighed 70 tons.

EAST WHEAL GEORGE.—We commenced operations on the 19th Nov., and have since progressed favourably, but have been much impeded by the heavy rains. The lode is now opened 37 fms. from the river, and requires to be driven about 8 fms. to take the lode, which I expect will be done in a week from the present time, when we shall at once commence raising ore. In contending in another part of the set, the lode has been proved at 8 ft. below surface, but cannot get deeper on account of water: the lode is here from 3 to 4 ft. big. There are four men employed in the adit, and from the appearances and nature of the ground I have reason to believe we shall spend it easy. As soon as the weather permits, we shall commence working on Mr. Adams's land.

ESGAIR LEE.—The following is an account of our setting for December:—The deep adit, east of the cross-cut, on the north lode, by six men, 4 fms. stent, or the month, at 6s. per fm., drove last month 2 fms. 5 ft. 9 in.; the lode worth, on an average, 4s. per fm. The winze to sink below the 12 ft. level, by six men, 3 fms. stent, or the month, at 12s. per fm., sank last month 2 fms. 3 ft. 4 in.; the lode at present is poor, and we have not yet got to the bottom of the lode. The lode in the 12 ft. level, per fm., drove last month 9 fms. 1 ft.; the lode is 4 ft. wide, and is composed of the very first quality gossau, with some stones of lead, and looking very promising. The deep adit, east from the base of the hill on the cauter lode, by six men, 6 fms. stent, at 6s. per fm. We have not yet holed the shallow adit west of Morgan's winze to the one east from surface; but in order to keep within the limits of my last estimate of the monthly cost, I will put some of the six men from the deep adit on the cauter lode, to connect the two shallow adits, and we have intercepted another branch of spar in the past week, and the lode is giving out additional water, which circumstance, added to the appearance of the ground, induces the belief that we are getting near the north wall.

HOLMBUSH.—The lode in the 120 ft. level south is 5 ft. wide, composed of hard quartz and stones of lead. The ground in the 120 ft. level cross-cut south, driving to intersect the flap-jack lode, is still favourable, being set at 4s. per fm. The lode in the 110 ft. level south is 3 ft. wide, composed of soft quartz, spar, and stones of lead; at present it has a much kinder appearance for producing a greater quantity of lead than for several fms. driving. The flap-jack lode in the 100 ft. level, east of the great cross-course, is 3 ft. wide, and will produce 3 tons of copper ore per fm. On the 27th Nov. we shipped on board the *Avon*, of Plymouth, 30 tons of silver-lead ore (dry weight), containing 100 tons of copper ore, and 100 tons of silver-lead ore; made on Friday last we sampled 100 tons of copper ore, 40 tons of which have been raised from the 100 ft. level on the flap-jack lode, the per centage of which, when ascertained, shall be sent you—the selling list will accompany the above.

KIRKUDBRIGHTSHIRE.—The lode in the 62 end west is 5 feet wide, yielding 15 cwt. of lead per fm.—We have resumed driving this end again this week; the lode in the winze is 3 ft. wide, yielding 10 cwt. of lead per fm., but very troublesome for sinking at present—this is over, and a little to the west of the 62 end. The lode in the 50 end east is not yet improved; the lode in the 50 end west is become too large to carry in the end. We have had a branch of lead on the north of the flookan worth about half-a-ton per fm., with a deal of fine copper ore mixed with spar by the side of it, but we have not got time to send you a sample; we intend to put a strong force on this week. We shipped another cargo of 40 tons of lead, on Thursday last, for the Holywell market.

LAMHEROEE.—Nor having as yet intersected the lode in the engine-shaft, I have nothing important to communicate since I last wrote; the cross-cuts are continuing from each shaft, ground more favourable for driving.

LEWIS.—Since my last report we have driven the 80 ft. level 5 fms. west from sump shaft (though a very promising lode, 2 ft. wide, with some spots of tin), which is holed to the sump winze shaft, where we have now good discharge. The lode in the 70 east is 3 ft. wide, worth 80s. per fm. The 70 east from sump shaft, on the south branch, is worth 7s. per fm.; the stopes in the back of this level are worth 20s. per fm. The 60 east from sump shaft, on south branch, is 1 ft. wide, saving work; the 60 south from sump shaft, on south branch, is much the same as when last reported. In the 50 east, on south branch, the lode is 10 in. wide, producing some good stones of tin; the 50 east from copper ore shaft, on Cock's branch, is worth 5s. 10s. per fm.; the south lode in the 50, east from Oak shaft, is 1 ft. wide, yielding some good quality tin. The lode in the 40, east from copper ore shaft, on Cock's branch, is worth 5s. 10s. per fm.; the lode in the 40, west from copper ore shaft, on Cock's branch, is worth 5s. 10s. per fm.

MENDIP HILLS.—I have no particular change to report to you this week in the appearance of any part of your works at Charterhouse; the men are still engaged in extending the cutting towards the eastern part of the valley, where the beds of slag stuff are about 14 ft. thick, producing some very good slag. At Ubley we are progressing with the incline plane towards the bottom of the valley—a good pile of slag has been washed from this place during the past week, as also a little slimes, away of which I have made, and find it contains 29 1/2 per cent. of metal. At Blackmoor we are now getting pretty near the bottom of the valley, where I think, on the whole, we have an improvement in the stuff now removing to the washing floors.

SOUTH TAMAR CONSOLS.—The engine-shaft is sunk 3 fms. 1 ft. under the bottom of the 100 ft. level; the lode in it is 3 ft. wide, and the ground moderately easy. In the 100 ft. level, the lode in the south end is at present disordered by a slide; during the past month, the lode in the south end is 3 ft. wide, of lead per fm., and, in all probability, it will soon be more productive; in the north end, in this level, the lode is 3 1/2 ft. wide—kindly, but not rich. In the 90 ft. level, the lode in the south end is 3 ft. wide—very easy for driving, and worth 9 cwt. of good rich work per fm.; this end has been extended 11 fms. 4 ft. 6 in., and thrown open 100 fms. of ore ground during the present month, all of which will set at a low tribute. In the 80 ft. level, the lode in the south end is 2 1/2 ft. wide, and worth 6 cwt. of rich ore per fm. In the 70 ft. level, the lode in the south end is 18 in. wide, and worth 5 cwt. of rich ore per fm. The 60 ft. level has been cleared 50 fms. during the past month; this level, however, was not driven on the course of the lode, and we have, therefore, determined not to clear it further, but have placed the men to clear the cross-cut westward, hoping thereby to find the main part of the lode. A winze from the 30 to the 45 ft. levels has been cleared, and made secure, with footway, &c., and both these levels are now well ventilated; we shall, therefore, resume driving the 30 and clearing the 45 fathom levels immediately. The pitches are all looking well, and as we are opening more ground, there is every prospect of increasing the returns.

SOUTH WALES MINES.—At Bodcall, in looking over a copy of my proposals to you, dated 28th November, I see I have advised the suspension at present of the shallow adit west on the south lode—consequently, the expenses to be incurred in driving this level is not included in my monthly estimate for this mine; therefore, I thought it not advisable to send it till I hear from you. The lode in the present end is 3 ft. wide, principally composed of blue slate; but in case you think proper, I will resume the level at once. At Dalwin, the deep adit, east of the Rhyndel river, on the south lode, by six men, 6 fathoms stent, or the month, at 3s. 12s. per fathom—drove last month, 5 fms. 1 ft.; the lode is 10 ft. wide, and looking very promising—being composed principally of friable quartz, flookan, mandle, lead, and copper ore, and is worth, on an average, 4s. per fm. for copper ore; the winze is to sink under the deep adit by six men, 6 fms. stent, or the month, at 4s. per fathom; the lode under the adit as yet is not taken down; but, previous to my next report, I will have it taken down. The shallow level, east of the Rhyndel river, by four men, 10 fms. stent, at 8s. per fm.

SOUTH WHEAL TRELAWNY.—The engine-shaft is sunk, by 9 men, 11 fms. below the 40 ft. level, and ground favourable; the strata is composed of a deep blue killas—water a little quicker. Things are in a regular course of working.

TAMAR SILVER-LEAD.—The engine-shaft is sunk 10 fms. 3 ft. below the 90 ft. level, the lode in it is small and unproductive; in the 190 end the lode is 1 ft. wide, producing work of a promising nature. In the 175 end the lode is 18 in. wide, opening ground that will set at a moderate tribute; in the winze sinking to ventilate this end, the lode is 6 in. wide, rich work. In the 160 end the lode is 1 ft. wide, composed of flookan, with a small quantity of ore. In the 145 end the lode is 3 ft. wide, yielding work of a moderate quality. In the 135 end the lode is 9 in. wide, good saving work. At North Tamar, the engine-shaft is sunk 10 ft. below the 80 ft. level; in driving north in this level the lode is 6 in. wide, good work. The 70 end north is suspended for the present, and the men put to rise a winze for ventilation; in the 70 end south the lode is 2 ft. wide, carrying two small branches of ore. We sampled on Saturday, the 1st instant, computed 81 tons of rich silver-lead ore—samples of which have been sent to the different purchasers.

TINCROFT.—On Highburrow tin lode, in the 152 fathom level, east of the engine-shaft, the lode is 4 ft. wide, worth 17s. per fm. In the 149 ft. level, east of Martin's east shaft, the lode is 1 1/2 ft. wide, worth 14s. per fm.; the stopes east of the shaft are worth 16s. per fm. In the 135 ft. level, east of Martin's east shaft, the lode is 4 ft. wide, worth 16s. per fm.; the stopes east of the shaft are worth 18s. per fathom. In the 120 ft. level, west of the engine-shaft, the lode is 3 ft. wide, worth 12s. per fathom. At North Tincroft, in the engine-shaft, sinking below the 100 ft. level, the lode is 4 ft. wide, worth 12s. per fm. for copper; in the 100 ft. level, east of the lode is 2 1/2 ft. wide, worth 8s. per fm. for copper; in the 100 ft. level, west of the lode is 5 ft. wide, worth 18s. per fm. for copper. In the 90 ft. level, east of Willoughby's shaft, the lode is 2 1/2 ft. wide, worth 8s. per fm. for copper; in the 90 ft. level, west of the engine-shaft, the lode is 3 ft. wide, worth 18s. per fm. for copper. In the winze sinking west of the engine-shaft, below the 80 ft. level, the lode is 3 ft. wide, worth 14s. per fm. for copper. On Chapple's lode, in the 100 ft. level, driving east of Cook's Kitchen, the lode is 4 ft. wide, worth 7s. per fm. for tin and copper; the west end in the same level is worth 14s. per fm. for copper. In the 90 ft. level, west of the lode is 3 ft. wide, worth 10s. per fm. for tin and copper; about 6 fms. to the east of this end, the men put to cut north, and have discovered a lode, worth 40s. per fm. for copper; we anticipate having therefrom about 50 tons of copper ore; in the winze sinking below the 80 ft. level, west of the shaft, the lode is 4 ft. wide, worth 6s. per fm. for tin. In the 70 ft. level, west of the shaft, the lode is 4 ft. wide, with stones of copper ore. In Palmer's shaft, sinking below the 90 ft. level, on East Pool lode, the lode is 4 ft. wide, with spots of ore; in the rise in the back of this level the lode is worth 5s. per fm. for copper. The 70 ft. level west is worth 6s. per fm. for copper. In the 36 ft. level, west of Stannaby's shaft, we have put the men to rise in order to connect the lode with the 84 ft. level, and the lode is 3 ft. wide, worth 12s. per fm. for copper. In the 24 fathom level west of the lode is 1 ft. wide, with some ore, but not to value; in the winze sinking below this level the lode is worth 20s. per fm. for copper.

TRELEIGH CONSOLS.—In the 125 ft. level, north of Garden's shaft driving towards the lode; uncertain as to the distance; it is probable we may see it this month. In the 100, west of ditto, lode 20 in. wide, with stones of ore. In the 90 west, lode 2 ft. wide, with good stones of ore. In the 80 west, lode 3 ft. wide, worth 20s. per fm.; ditto, on south part, lode 18 in. wide, with stones of ore and more kindly. In the 70 west, lode 2 1/2 ft. wide, with good stones of ore. At Wheal Parent, in the 40 ft. level, east, lode 2 1/2 ft. wide, of a kindly appearance, but disordered by a cross-course; it has drained the 30 ft. level, and we expect ore soon. In the winze in the 30 ft. level, lode 2 1/2 ft. wide, worth 20s. per fm. In the 30 ft. level, east, lode 3 ft. wide, worth 4s. per fm.; in the 30 ft. level, west, lode 3 ft. wide, with some ore. In the adit, east of Nicholson's shaft, on middle lode, lode 18 in. wide, worth 3s. per fm. The 80, east of cross-cut, is holed to western cross-cut. The 60, west of Garden's, is suspended, being poor, and no great distance from the boundary. The 20, west of Parent shaft, is suspended, and no great distance from the boundary.

WHEAL MARY WORTH AND WHEAL BROTHERS.—In my last report I stated there was a favourable prospect for a fair quantity of ore for the then ensuing sampling; I have now to state the two parcels of silver ore, for October month, realised 114s. 13s. 9d. The lode presents a favourable appearance for yielding remuneration for development, and the tributaries are breaking work of a moderate quality. On the tin mine, last week there was a pile taken by two men and a horse, worth 10s. 10s. per ton; I expect to be able to report favourably on this portion of the mine also in the course of a short time. On the whole, I have not seen the concern looking so well as at this present time.

WHEAL BENNY.—At Ford's shaft we met with a slight accident. The rod leading from the wheel to the main bob broke, which was shortly set to rights, but will take us all this week to draw out the water. The 10 ft. level cross-cut is driven 2 fms. 5 ft., and shall have about 9 ft. more to drive to intersect the Benny lode.

WHEAL BRIDFORD.—We expect to cut the lode in three weeks, the ground looking much kindly.

WHEAL LAWRENCE.—In driving the adit which we have, within the last few days, cut some water, and the ground looking more likely for draining the water from the shaft, having met with more branches of mandle, spar, barytes, &c. I think we have now about 15 fms. more to drive to get home to the lode. We have been cutting through the lode by driving east, and find it 20 ft. wide, containing mandle, soft spar, killas, flookan, and some spots of lead. We do not intend to cut through the lode again before we reach the shaft, which I hope will be completed by the end of December.

WHEAL MAY.—During the past week our agent has furnished us with a good deal of valuable information, which was laid before the meeting on Wednesday last, and received by the committee with great satisfaction—the following of which is a condensed form:—At our western adit we have driven home and cut the first part of the rich silver lode, which we found to be excellent work, both for silver and copper. We have sunk our shaft on the lode about 5 ft.; the lode will average 15 in. wide—it is very solid; we shall hole to the adit in the course of the present week; we are also driving east and west on the course of the lode, and raising a quantity of fine work, a good parcel of which we hope to sample by the first week in the new year; the lode appears to be improving as we drive east, and there is no reason to doubt that we shall have an extraordinary rich mine. At our eastern adit, which is parallel to the above, about 160 fms. distant, the water in the end is coming out very strong, showing we cannot be far from the lode, which, when we cut, will give us some 10 fms. back. We are preparing for the erection of an ore house, bucking sheds, and floors, which we hope to complete in the course of 10 days. Weekly reports of our progress will be sent to the office for the information of shareholders.

WHEAL TRELAWNY.—In the 82 end, north of Phillips's shaft, the lode is 3 ft. wide, worth 6s. per fathom. In the 82, south of ditto, the lode is 3 ft. wide, worth 12s. per fathom. In the 78, north of ditto, the lode is 2 1/2 ft. wide, worth 9s. per fathom. In the 72, south of ditto, the lode is 2 1/2 ft. wide, worth 8s. per fathom. In the 62, north of ditto, the lode is 4 ft. wide, worth 12s. per fathom. At Trelawny's shaft, the cross-cut is driven 2 fms. 4 ft. towards the lode in the 82 ft. level. In the 72 end, north of ditto, the lode is 4 1/2 ft. wide, worth 15s. per fathom. In the 72, south of ditto, the lode is 2 1/2 ft. wide, worth 9s. per fathom; the end is suspended for the present, the men being engaged rising, as referred to last week. In the 52 end, north of ditto, the lode is 2 1/2 ft. wide, worth 10s. per fm. At the north mine, in the 55 end, north of Trebarn, there is no alteration since last reported. The 40 end, north of Smith's shaft, have holed the rise, and have now resumed driving the level. We see no change in the stopes worthy of remark. The parcel of ore sold this day has made 18s. 13s. per ton.

WEST WHEAL JEWEL.—In the 85 ft. level, west of Williams's cross-course, on Wheal Jewel lode, lode worth 5s. per fm.—drove last month, 1 fm. In the 70 ft. level, west of Williams's cross-course, on the same lode, lode worth 20s. per fm.—drove last month, 1 fm. 3 ft. 6 in. In the 47 ft. level, east of Williams's cross-course, on the same lode, lode worth 5s. per fm.—drove last month, 2 fms. In the deep adit, west of Williams's cross-course, on the same lode, lode unproductive—drove last month, 1 fm. 1 ft. In the 57 cross-cut, north from Buckingham's lode, ground much harder for driving—drove last month, 2 fms. 2 ft. 6 in. In the shallow adit cross-cut, 2 fms. 2 ft. 6 in. drove last month, 1 fm. 3 ft. In the deep adit, west of Trengon's shaft, on Tolcarne tin lode, lode producing stones of tin—drove last month, 1 fm. 2 ft. 6 in. In the 12 ft. level, west of ditto, on the same lode, lode 2 ft. wide, unproductive—dro

The resolution having been carried, the CHAIRMAN, in putting forward the next motion, observed, that the shareholders had met for the purpose of augmenting the capital, by making a further call of 4*l.* per share, or adopting such other course for raising funds, as the meeting should deem fit. It was unnecessary for him to say that good and substantial reasons could be afforded why a further call should be made, there being good grounds for anticipating (while he had no hesitation in expressing his conviction) that the whole of their capital would be got back, and a handsome return made on their investment. The position of the company, he considered, far better at that moment than some three or four months back. It was highly desirable—indeed, he might say, indispensable—that a branch railway should be made to Llanelli. Parties were ready to undertake it, and he was glad to hear that the directors of the company, who had been on the board had had an interview with Colonel Cannemey, who willingly assented

the views entertained by the directors, and had agreed to make the required concessions; and, furthermore, Colonel Cameron expressed his readiness to fall into any arrangement which might meet the approval of Mr. Elderton, to whom he confided his interests. He (Col. Cameron) had, moreover, signed a paper concerning the several points required.

A question having arisen as to the terms or extent of concession thus obtained, Mr. Elderton proceeded to state that the chairman, Capt. Norcott, the secretary, and himself, had on two several occasions, had an interview with Col. Cameron, the result of which might be briefly recapitulated. The company consisted of 20,000 shares, of these 11,970 were held by W. Cameron, Esq. (the vendor), 4187 by the body of shareholders, and 3553 were locked up, during which time, by certain shareholders to the company in liquidation of claims on them, and were placed in the hands of trustees. The proposition was simply this, that instead of Mr. Cameron claiming an interest or right by virtue of his holding 12-20ths, or a majority, that the following arrangement should be entered into, it being self-evident that some such course should be adopted to meet the obligations of the company, while he had no hesitation in stating, that each shareholder was individually liable for the whole of the debts; and, therefore, it was highly desirable some arrangement should be forthwith effected. Not only were the liabilities required to be discharged, but funds were necessary for the construction of the railway, and, further, a working capital was required to carry out the operations of the colliery. Mr. (Mr. Elderton) would suggest that, if the shareholders were not ready to pay further moneys, which to a certain extent they would be compelled to do, then that they should sell the shares now held in trust by the company. The arrangements to which he had referred might be thus classified. The company being formed of 20,000 shares, and in the relative proportions to which he would assume as the trust shares; on the disposal of which, the funds arising therefrom would be applicable to the company's liabilities or future operations. To render himself clear as to the prospect of disposing of such shares, and thereby realising a capital, he would observe, that it was proposed such shares, being one-fifth of the entire number, should be considered and held as preferential shares, entitled to interest of 6 to 8 per cent. receivable before any surplus or profit should be divided among the other shareholders. The second class it was proposed should consist of 8000 shares—the one-half being held by one-third of the interest at present held by Mr. W. Cameron, the interest, or dividends, payable thereon being only receivable after the payment first being made to the preference shares. The third-class would consist of 8000 shares, belonging to Mr. W. Cameron, on which he would claim no dividend or profit until 8 per cent. had been first paid on the 12,000 shares previously referred to. Mr. Cameron was a large creditor—the company being in debt to him 36,000*l.*; while he was ready, if such an arrangement be carried out, to guarantee that the parties taking the 4000 (trust) shares should be exempted from any claim on his part. It was proposed on the part of the board of directors, and in which Mr. Cameron coincided, that a call of 4*l.* per share should be at once made, of which a moiety should be called—i.e. thereof being considered as paid thereon by the call made in July, 1848; so that virtually the call would be only 2*l.* per share, exclusive of the arrears due, amounting to about 2000*l.* In making such call, the debt due the vendor would be at once cancelled; while the bonds held by that gentleman, amounting to 8300*l.*, he was willing should stand over for 20 years—interest being paid thereon at the rate of 5 per cent. such bonds being due earlier in 1851. By this proposed arrangement, the company would liquidate the demand, so far as effected the residue of the purchase money.

Mr. STANLEY was desirous of stating to the meeting that, from communications he had received from parties, no question need be entertained but that if the proposed measure were carried out, there would be ample funds raised by the disposal of the "trust" shares, with the advantages proposed, and which, he felt assured, would be generally availed of by many of the shareholders and the public, upon the proceedings of the meeting being put before them.

Mr. ELDERTON would submit to the meeting the suggestions made by Mr. William Cameron, on making the concessions referred to. He (Mr. Cameron) required the company should sink a pair of shafts, so as to take the Broad Oak seam, and form a new "winning," as it was considered that the present "get" by the "slant" would be exhausted in three years from the present time, at the rate of 80,000 tons per annum.

It was proposed that Mr. Daglish, or some other practical viewer, superintendent the operations, so that upon the present quality of coal worked upon the slant, the new workings would be taken into consideration, the depth to be sunk being about 250 fms. Mr. SMALLWOOD having taken much interest in the concern, had caused reports to be made as to the contemplated capital required. He was led to believe that there was, with the proposed "winning," a supply for at least 50 years, and that the expenditure would not exceed 21,000*l.*, although Mr. Daglish, in his estimate, had put the figures somewhat higher.

Mr. ELDERTON wished to direct the attention of the meeting to the projected railway, which, by the plan laid on the table, is 2½ miles in length, a power having been obtained from the several parties to pass through the lands and across the bridge. Mr. SMALLWOOD observed that, since he had been appointed a director he had availed himself of the opportunity afforded of acquiring that information which he had not been able to do simply as a shareholder; and was well pleased, on close investigation by himself and agents employed, to find the concern so well deserving support. He had felt it his duty, in the position in which he was placed, to call a meeting on the 18th of October, when he had entered fully into the affairs of the company; but few shareholders, however, were present. His object was to see whether anything could be done so as to maintain the position in which it was unfortunately placed; and on which occasion the resolutions passed were highly gratifying to him. On the 26th, a further meeting had been held, when the pecuniary position of the company was taken into consideration, he having been furnished by the secretary with the fullest information, and every facility afforded him. With reference to the advances made by himself and his co-directors such had been strictly applied to the payment of the debts due by the company, and which it was most important to discharge, so as to avoid personal liability. Law expenses alone on which he was well assured that the works would be in active operation, and perseverance to avail themselves of the immense body of coal which they possessed; while he need hardly say that, with regard to the debts owing, every one belonging to the company must necessarily pay in purse or person. He (Mr. Smallwood) considered it absolutely necessary that the railway should be constructed; and it was only for him to observe, that a loss of 3000*l.* by the purchase of horses had been incurred; and in one instance alone of a vessel purchased by the company, a loss of 670*l.* was incurred. An Act of Parliament had been obtained, whereby a branch might be made to the South Wales Railway of 14 miles, and he was well informed that the expenses of every mile of this branch would not exceed one farthing per ton. As regards the railway, Mr. Hennett, the contractor of the South Wales line, has offered to complete the same within three months, at a cost of from 4300*l.* to 4500*l.*, receiving one-third in cash in payment thereof, and the other at prolonged periods. Assuming the railway to be constructed in such time, he was well assured that the works would be in active operation—being capable of yielding 1500 tons per week. A misconception had arisen in some quarters with respect to the dead rent of 2000*l.* per annum—the royalty being 1*l.* per ton. Such sum represented the raising of 40,000 tons; whereas any moneys paid as rent, and not the quantity of coal raised, which would represent the royalty, such excess was placed to the credit of the company, and deducted from their future workings, on any surplus beyond 40,000 tons per annum—the amount at present thus to the credit of the company being 3500 tons. From careful inquiries instituted, it would appear, including royalty, the cost of raising coal would not exceed 3*l.* 6*d.* per ton, while the sale price thereof would give a profit of 2*l.* 3*d.*, which, on 80,000 tons per annum, would be equal to 9000*l.* per annum.

Mr. WEBB wished to be informed what was the amount of the present liabilities of the company, from which it appeared, that in addition to the purchase-money of 36,000 due to the vendors, and 8000*l.* bonds, there were other liabilities amounting to 13,000*l.*

Mr. ELDERTON wished it to be understood by the meeting that in the liabilities so given, his claim for law expenses was not included; and, in reply to a shareholder, as to what was the probable amount, that gentleman stated, he could not name the sum within 1000*l.*, although he, at the same time, produced a blue bag with volumes of papers representing bills of costs, including common law, Parliamentary expenses, conveyancing, *cum multa alia*. The learned gentleman having opened the bag, laid upon the table the several documents—some five or six in number; and upon the question being pressed, as to the amount due to him, he could only repeat the observation he had before made; stating, that although the accounts had been partially made up by his clerks, from his necessary absence from town during the past six weeks, he had been unable to go through them; one bill, of which a fair copy had been made, amounted to about 700*l.*; a second bill, which had not been cast, might possibly be about the same amount; the others he could say nothing upon, for he had no idea as to the sum.

Mr. WEBB, on referring to the last balance-sheet, observed that, up to 30th June last, the amount paid for law and Parliamentary charges was 625*l.* 8*s.* 10*d.*, and wished to know whether such amount included all, or any part, of the bills then before the meeting. It did not appear that either one party or the other connected with the management could give any reply, it being stated that Messrs. Quilter and Co., the accountants, had, upon the last occasion, made up the accounts; and we suppose it must be assumed that the secretary, directors, and auditors, were perfectly innocent as to their nature. In the end, the several bills having been "laid on the table," without any explanation being afforded, or the amount given, were restored to their original resting-place, and, we presume, will, one day or other, be "cast up," and laid before the shareholders in due course.

In reply to a question from a shareholder, it was stated that the entire debts, including purchase money, bonds, &c., amounted to about 60,000*l.*

Mr. WEBB wished to draw the attention of the meeting to the position in which shareholders were placed, whether the company be considered as fraudulent or otherwise. A case had lately come before the law courts—that of the "Direct Exeter Railway"—wherein A. Mr. Wontner, as shareholder, or subscriber, for certain shares, recovered from the directors the amount of his deposits on the plea of fraud, the company not having been constituted, or formed, in accordance with the provisions in the prospectus. He (Mr. Webb) recovered the amount paid by him, a verdict being given in his favour on the evidence adduced. It appeared that subsequently an application was made under the Joint-Stock Companies' Winding-up Act, for the purpose of discharging the claims upon the company, and an order was issued upon the several parties who had taken up shares to pay their relative proportions. The plaintiff, in the case cited, was called upon to pay his quota; and, having neglected or refused so to do, Vice-Chancellor Knight Bruce decreed that, although he had received back the amount advanced by him on the shares, yet that he was still liable as a contributory to the debts of the company, which decree has since, he had reason to believe, been confirmed by the Lord-Chancellor. He (Mr. Webb) having carefully attended to the proceedings of the day, had no hesitation in expressing his confidence in the untruthfulness, and, should the arrangements be carried out as proposed, would readily embark capital in the prosecution of the proposed workings.

The several resolutions entered into for confirming the contracts, or agreements, for advance of moneys, the construction of the railway to Llanelli, and a call of 4*l.* per share, having been carried, a vote of thanks was passed to the chairman, directors, and secretary, when the meeting adjourned.

CERRO DEL BOTE MINING COMPANY.

A special general meeting of shareholders in the Bolanos Mining Company, and others to whom notices had been sent, was held at the London Tavern, Bishopsgate-street, on Wednesday last, the 5th inst., for the purpose of considering the prospectus issued by the promoters of a new company for working the Cerro del Bote Mine in Mexico (Messrs. John Taylor, jun., and R. A. Kerrison), and for completing the necessary arrangements under such circumstances.—Mr. JOHN TAYLOR, jun., was unanimously called to the chair.

On opening the business of the meeting, the CHAIRMAN said, he would not take up their valuable time in making apologies, but he could have wished the duties as chairman had devolved on some gentleman more independent in the proposed company; as he felt, being one of the promoters, he could have probably expiated more freely on the advantages of the property, if unshackled by the duties of chairman; he would, however, state fairly his views on the subject. He then read the circular convening the meeting, which had been forwarded to all the shareholders in the Bolanos Company, and several other capitalists who were likely to take an interest in the new company, and a preliminary prospectus, a copy of which had been forwarded with each notice. It proposed that the capital should be 50,000*l.* in 5000 shares of 10*l.* each, payable by instalments, as follows:—3*l.* per share on allotment, 2*l.* on April 15th, 2*l.* on 15th July, and 2*l.* on 15th October, 1850; the management of the

company to be in the hands of five directors, to be elected at a general meeting of shareholders, to be convened immediately after the allotment of the shares; the directors to give their services gratuitously, until the proprietors, at a general meeting, vote them a remuneration. It then proceeded to state—

"The object of the proposed company is to work the mines of the Cerro del Bote, in the State of Zacatecas, in the Republic of Mexico, already as well known as having been lately in possession of the Bolanos Mining Company, the directors of which, notwithstanding the favourable state of the mine, have been reluctantly compelled by circumstances to return it to the owners. These, having regained possession, now agree to enter into a fresh contract for the same, on terms more favourable than those under which the Bolanos Company held them, and which, considering the very advanced state of the works, and the little requiring to be done to bring them into a prosperous state, must be deemed most advantageous."

"The owners, in consideration of 20,000*l.* paid to them in London, will transfer to the present company the mines and hacienda of Cinco Senores, with the whole of the property thereon as delivered to them by the Bolanos Company. The stock and property consist of two steam-engines (one erected and in full work on the mine), stores of quicksilver, forage, fuel, timber, iron, steel, tools, cattle, implements, and ores on hand, the whole of which are indispensable, and could not be placed thereon for three times the sum above named; besides the hacienda of reduction in full working condition, and capable of reducing nearly 2000 carcas of ore weekly. The first profits to be devoted to reimburse the company the whole of their outlay, after which one-fifth of the net divisible profits to be set aside to liquidate an acknowledged claim which the Bolanos Company have on the mine, amounting to 58,496*l.* 11*s.*; the remaining profits to be equally divided between the company and the owners; the latter to receive in advance, as alientos, the sum of 2400*l.* per annum, such advances, however, to be deducted from out of their proportion of subsequent profits. The mines are in perfect working condition, having never been suspended; and, the drainage by steam-power being complete, no delay need occur in prosecuting the proposed works of discovery, for which purpose it is considered that the remaining 30,000*l.* of the capital will be amply sufficient, and which can hardly fail to lead to important results."

A ground plan of the negociation and section of the workings was laid on the table for inspection; it comprised three sets, called San Eligio, Nueva Valencia, and San Jorge, in the first of which only trial has been made. The Cerro, or hill, is situated about two miles westward of Zacatecas, forming a long narrow ridge, rising from 400 ft. to 500 ft. above the adjacent lavines, having a direction nearly east and west. Several large veins in a similar bearing pass nearly along its summit, the principal of which is the San Jorge, which at its eastern extremity forms a junction with another large vein, Nueva Valencia. They are of the class called champion lodes, and are, doubtless, continuations of the rich and well-known veins of Cantera and Quebradilla, both of which have been immensely productive. Quebradilla for a long period up to 1810 produced weekly 7000 carcas of ore. A shaft, called San Fernando, has been sunk, and at 110 yards depth a cross-cut was made, 50 varas long, which cut the San Eligio vein in rich and abundant ores. For a long time the vein continued to yield largely, the average weekly produce at one period being 3000 carcas. The mine costs increased, however, with every yard sunk; the removal and erection of the engine occupied a long period, and entailed a heavy expense, and the whole greatly aggravated by political agitation, and the high price of quicksilver and provisions. Notwithstanding these drawbacks, for some months the mine worked at a profit; but the ores having failed, both in quantity and quality, and the directors having been unsuccessful in raising more capital in England, they had no alternative but to return it to the owners.

In order to show the productiveness of the vein, it will be sufficient to say that, during the period of the Bolanos Mining Company's possession, the returns have amounted to upwards of 1,500,000*l.*; and after paying the mine's costs, and those of reduction, the net gain thereon was 2363,500*l.*, which, under ordinary circumstances, and with the facilities now possessed, would have exceeded 5000,000*l.* This profit of 2363,500*l.*, together with 380,000 (the whole capital invested by the Bolanos Company), and 877,000*l.* which has been borrowed, or left unpaid, by the company, makes a sum of 380,000*l.* as the total receipts, which has been disposed of as follows:—In unproductive works, such as the shaft of San Genaro, Taylor's cross-cut, and other works in this part of the mine, the erection of the engine, buildings, &c., about 255,000*l.*; in the purchase and fitting up of a hacienda about 850,000*l.*; the balance consisting of stores and other mining materials, cattle, cash, and ores on hand. The above results were from a portion of one vein only, which may be expected again to become productive when the present stratum of ground is passed through; and there is every reason to believe that the other lodes will prove equally rich, or even more so, when tried at sufficient depth. Materials and stores are lower than at any former period, labour is abundant, and the authorities seeing, though late, that the welfare of the state is so much identified with successful mining adventure, have lately shown a disposition to encourage it by a reduction of duties; and a decree has just passed, by which all mining establishments are exempt from forced loans and extra duties. The savings to be effected in working, as compared with former years, may be fairly estimated at from 25 to 30 per cent.

The CHAIRMAN said that, in forming a new company, it was resolved to give the first chances to the old shareholders in the Bolanos Company. They had now the mine of Cerro del Bote offered them on what he considered advantageous terms, and entirely unencumbered by debts or difficulties; and they would hold possession from the 25th Aug. last. The 20,000*l.* to be paid by two instalments had been much remarked upon. The purpose for which it was to be paid he would explain. It must not be erroneously supposed it was for the mine; it was for the purchase of a large amount of necessary materials and stores with which the mine was furnished, and which had been taken by the owners of the Bolanos Company. If these stores were not on the mine, they would have to be purchased at a very much larger expenditure; and so low was the sum named, that the owners were willing to have an inventory made, and allow a large per centage off cost price, and even then there was no doubt they would come to a larger sum. He had thought it advisable to have a definite sum named, as the meeting then knew their liabilities. He then observed that they had no alternative but to form the company under the Joint-Stock Companies' Act, which, although it originally left an individual subject to all liabilities, was now so modified by the Winding-up Act, that it was tantamount to a restricted liability for only the amount of shares held; for should any individual be sued, he could apply to the Vice-Chancellor, who would levy a *pro rata* amount on all the shares alike.

In reply to a question from Mr. Ruding, the CHAIRMAN said he had been requested to act as a director; and though his professional duties increased with the failing health of his father, from a wish to see a successful mine in Mexico, he had consented; they could not, however, be appointed until after the allotment of shares.

After some further explanations of the prospectus, in answer to inquiries, a committee was named, consisting of Messrs. Brown, Henderson, Langworthy, John Taylor, jun., Ruding, and Gifford; and, a vote of thanks having been passed to the chairman, the meeting separated. About 15,000*l.* was said to be subscribed for in the room; and it appeared from the feeling of the meeting, which was well attended, that the full amount would be soon subscribed for.

COOMBE VALLEY SLATE QUARRY COMPANY.

At a special general meeting, held at the Green Dragon, Bishopsgate-street, on the 20th of Nov. last, it was resolved, that the resolution for creating 500 new shares on the 27th August last be rescinded, that as only 816 of the 900 shares vested in the trustees had been allotted—leaving 84 in hand—the same be divided among the shareholders, in the proportion of 1 share for every 10 shares held, at a meeting to be held at Coggeshall, on the 1st January, 1850; but any shareholder being in arrear on that day shall forfeit his right to such share. Any shares remaining after this allotment to be offered for sale among the shareholders. A call of 10*s.* per share was made; and as the last call made 5*l.* per share paid, the holders of the 100 shares allotted to the original proprietors of the Coombe Valley lease are now called upon to pay the present call.

At a previous meeting of the committee a report was read from the solicitor and secretary, which stated that it was not desirable to retain the Coombe Valley estate, but the Crackington Quarry, with its works, and the Allshard Quarry, with its valuable working rock, presents a certainty of liberal remuneration to the shareholders. A fine bed of slate was opened, of first-rate quality, estimated in value at not less than 16,000*l.*, which can be worked upon immediately, and sufficient for the employment of 200 men for four years. The facilities of working and sending the ore to market, which may be done on tribute, would secure a profit of two-thirds of the selling price. About 1500*l.* worth of slate was already manufactured. A very slight addition of machinery would be required, not above 50*l.*, which, with about 400*l.* for labour, in about five months, it was estimated, would produce 1500*l.* worth of slate; they, therefore, recommended not creating the proposed 500 shares, but the existing shareholders to raise the required additional capital among themselves.

HERODSFOT MINING COMPANY.

At a meeting of adventurers, held at the Jamaica Coffee-house, on the 23d of November—H. J. BLAKLEY, Esq., in the chair—the accounts were examined and passed, showing—Balance last account, 3552*l.* 17*s.* 2*d.*; labour cost, July, 938*l.* 4*s.* 3*d.*; August, 968*l.* 9*s.* 8*d.*; September, 745*l.* 1*s.* 7*d.*; Oct., 191*l.* 5*s.* 10*d.*; Nov., 540*l.* 17*s.* 10*d.*; By calls, 1280*l.*; ore sold, August, 1188*l.*; September, 1073*l.* 5*s.*; October, 1073*l.* 12*s.*; leaving balance against the mine of 1722*l.* 9*s.* 10*d.*—Arrears of calls to this date amounted to 534*l.*

As it appeared from the statement of Mr. Wolferstan, the manager, that the mine has made a net profit of 480*l.* during the past three months, and that he sees his way clear to make from 1500*l.* to 2000*l.* per month profit for the future, it is thought expedient to clear the mine from debt, and so enable the profit to be regularly divided. It is, therefore, proposed to create 256 new shares, and to offer them, *pro rata*, to the present shareholders at 5*l.* per share, instead of making a call of 5*l.* per share, which will be required to clear the debts up to the end of November.

WHEAT BASSET.—The account meeting was held at the mine on Tuesday last, when the following statement was produced:—By sales of copper and tin ores (less 15th debts), 4239*l.* 18*s.* 10*d.*—Labour cost for September and October, 2011*l.* 12*s.* 6*d.*; merchants' bills, 557*l.* 8*s.* 8*d.*—2568*l.* 8*s.* 8*d.*—showing a profit of 1672*l.* 9*s.* 5*d.*; add balance in favour last account, 519*l.* 9*s.* 11*d.*—2190*l.* 10*s.* 4*d.*; by dividend of 15*s.* per share, 1920*l.*—leaves balance 270*l.* 10*s.* 4*d.*

TRETHEVEY COPPER MINING COMPANY.

At a general meeting of shareholders, held at the offices of the company, High-street, Exeter, on Saturday, the 1st of December,

WILLIAM THAYER, Esq., in the chair,

The CHAIRMAN opened the proceedings of the meeting by advertising to the prospectus of the present company, and entering into a more detailed statement of the prospects and probabilities of future results, fully anticipated from more efficient operations in the mine. He referred with confidence to the reports furnished by several practical agents who had been consulted; and the prevailing views with agents and miners, amounting to an unanimous opinion, from the general appearance of the lodes, the proximity of the sett to South Caradon, with similar stratification and advantages, that there was no reason to fear a successful result, and the present proposed amount of capital, with economical employment, would prove sufficient to develop the lodes already opened on.

The cost-book was opened, and rules and regulations for the government of the company were adopted. A committee of management, consisting of ten gentlemen, were named, and Messrs. Traer, T. Snell, and Charles Richards, were appointed trustees for the adventurers, for carrying out the conditions under which the mine is established. A list of the former adventurers in the Caradon Copper Mine, who had accepted of the offer of shares in the present company, and the new shareholders, were read over and registered. The committee were requested to meet on an early day for the purpose of closing the list of applications for shares.

The following report, from Captain Seymour, was read:—

Nov. 29.—My first visit to this mine was in June, 1848, when my attention was first drawn to see a lode in or about the middle of the sett; an adit has been driven on this lode about 90 fms.; throughout the lode appears regular and compact, full 3 ft. wide, composed of spar, gossan, prase, &c.; nothing further has been done on this lode since that period, but I certainly consider it as well worthy of further trial. The shaft was at that time sunk about 33 fms. from surface, in the bottom of which I was pleasantly surprised to see the nature of the ground so strongly mineralized. In the south side of the shaft there was a branch of mundle and copper, 8 in. wide, which would fall into the lode they were expected to cut by sinking the shaft some 3 to 4 fms. deeper; this I think to be an object of no small importance, as it is a well-known fact that instances of this kind have proved very productive in other mines. As you are, no doubt, well aware they were unable to accomplish this object in consequence of the slackness of top water, subsequently they commenced driving to cut the main lode in the 30 fm. level, which was shortly done, being only about 4 ft. north of the shaft; this proved to be a lode from 5 to 6 ft. wide, composed principally of prase, quartz, a large quantity of prase, with some very rich black and yellow copper ore; indeed, it is one of the prettiest lodes I ever saw. Since then a level has been driven east about 15 fms., and west about 20 fms. on the course of this lode in the 30; westward, they had not descended far from which I have broken some very rich stones of black and yellow ore; and I have been credibly informed by one of the miners who worked there, that there is a capital lode gone down in the bottom, and a few tons of ore have been broken from the backs; eastward, some very rich stones of ore were found, particularly in the bottom of the end, close home on the cross-course, and I am well assured it has never been seen beyond it; this, of course, should be borne in mind, as in driving this level we shall increase our backs. The shaft I have to call your attention to is the south side, which was cut into at the 30 fm. level, and extended on from 40 to 50 fms. east, lode from 2 to 3 ft. wide, well defined, in a splendid stratum of ground, composed of rich looking gossan, lead, jack, quartz, &c., prase, &c., and occasionally good stones of yellow and black copper ore, very similar to the one before described. A pitch was set on tribute in the back of the level. This lode was also cut in the 30 fm. level, and extended on a few fathoms east, where it had a promising appearance, but the operations were suspended before getting under where the mine was found in the 30 fm. level. It is my firm belief, that as soon as you get your shaft down from 15 to 20 fathoms deeper, you will get sufficient returns from these lodes alone to amply repay the outlay. There are five other lodes in the sett which I have seen in the co-ten pits, many of them presenting the most favourable indications. I wish you to understand that the whole of the lodes referred to run the full length of the sett, which is about 450 fms.—ample scope for copper.

WELLINGTON MINING COMPANY.

At a meeting of adventurers, held at the offices, George-yard, Lombard-street, on the 3d inst., the accounts were examined and passed, showing—Balance last account, 64*l.* 15*s.* 3*d.*; copper ore sold, 1300*l.* 9*s.*; tinstuff ditto, 144*l.* 15*s.* 7*d.* (less lords' dues, 80*l.* 5*s.* 10*d.*)—1364*l.* 18*s.* 9*d.*—By labour cost for May, 210*l.* 7*s.* 2*d.*; June, 257*l.* 14*s.* 1*d.*; July, 255*l.* 2*s.* 10*d.*; August, 265*l.* 1*s.* 5*d.*; merchants' bills, 277*l.* 12*s.* 5*d.*; leaving balance, 163*l.* 16*s.* 1*d.*—The following report, from Capt. Matthew White, was read to the meeting:—

Dec. 1.—The engine-shaft is sunk to the 42 fm. level, and on Thursday last we commenced driving north in this level for the purpose of intersecting the lode; the distance expected to be about 15 ft., which I hope will be accomplished within a fortnight from this time. From the appearance of the 32 fm. level, we have every reason to expect something very good in the 42. The course of copper ore in the 32 fm. level has been driven 14 fms. long—a much longer branch than in any former level, and the quality quite as good; this level is driven 4 fms. east of Parcolly's shaft; the lode in the end at this time is 18 in. wide, 1 ft. of which is good for copper ore. Parcolly's shaft, I expect, will be communicated to the 32 fm. level this week; the lode in this shaft at present is about 1 ft. wide, producing copper ore and tin. The lode in the 23 fm. level, east of Parcolly's shaft, is about 15 ft. wide, and at present poor; for the last month's driving it has been worth about 300*l.* per fm.; it is the best lode we ever had east of this shaft. The adit level on the south lode is poor; it is driven to the pump-shaft, and shall commence rising against it; when this is communicated it will enable us to open the western ground very quick. The western cross-cut in the adit level, driving north, has not yet reached the lode; but we are expecting it every fathom we drive. The ground is very much improving; it has been hard; had not that been the case we should have reached the lode a month ago. The shaft that was sinking from the surface on the cross-cut, north of the engine-shaft, was communicated last Wednesday evening. We shall at once resume the driving of this cross-cut north, and also east and west on the lode in this shaft. From all appearance, the ore under the slide dips west; this being the case, it will very soon be found west of the engine-shaft. Our pitches, on the whole, are just as they have been for several months past; but I think we shall shortly have some in the bottom of the mine very much better. Our copper sampling, on Tuesday last, was as follows:—31, 42, 33—126 tons (21 cwt.); quality much the same as at the two last samplings. We hope to sample Tuesday next, the 4th instant, 250 barrows of tinstuff, which we hope to send worth.

GREAT WORK.—At a meeting of adventurers, on Tuesday last, the accounts for July, August, and Sept., were produced, showing—Tin sold, 3595*l.* 15*s.* 5*d.*; materials, 36*l.* 13*s.* 8*d.*; balance in hand to the end of June, 380*l.* 11*s.* 4*d.*—4031*l.* 5*s.* 5*d.*—To costs, lords' dues, &c., 2848*l.* 18*s.* 3*d.*—A dividend of 7*l.* 10*s.* per share was declared—leaving a balance of 276*l.* 12*s.* 2*d.* in pursers' hands. The prospects of the mine are represented as highly satisfactory.

HAWKMOOR.—In the Mining Journal of Saturday last, the agents' report of this mine was headed "Gunnis Lake Mining Company," which mine, we understand, has ceased operations. It must, therefore, be referred to as the report of the Hawkmoor Mine. The shaft had been sunk 5 fms. 1 ft. since the previous meeting, and was 7 fms. 3 ft. under the 20 fm. level. The lode in the shaft was 3 ft. wide, composed of fluor-spar and mundle, carrying a leader of ore 18 inches wide, and would yield from five to six tons per fm. It varied considerably in sinking, yielding, at times, as much as eight tons per fm.; it now appears more settled. The lode in the 20 fm. level west was 2 ft. wide, producing stones of ore—a promising lode. In the 20 fm. east it is 3½ ft. wide, carrying one leader, 18 inches wide on the north, and 14 inches on the south wall, worth 25*l.* per fathom.

SOUTH MOLTON CONSOLS.—At the meeting on Tuesday the accounts were examined and passed, showing—Amount received on calls, 4592*l.*—By labour cost for Aug., Sept., Oct., and Nov., 412*l.* 8*s.* 7*d.*—leaving a balance in favour of adventurers of 467*l.* 11*s.* 5*d.*, which, deducted from balance of July account, 807*l.* 5*s.* 8*d.*, leaves amount in debt, 260*l.* 14*s.* 3*d.*—A call of 2*l.* per share was made.

SOUTH WHEAL JOSIAH.—At a meeting of adventurers, held at the Queen's Head Inn, Tavistock, on the 28th Nov., the accounts were examined and passed, showing—Balance of last account, 27*l.* 10*s.* 2*d.*; calls, 122*l.* 2*s.* 4*d.*—24 shares sold, 12*l.* 10*s.*—162*l.* 0*s.* 2*d.*—By labour cost for July, Aug., and Sept., 59*l.* 10*s.* 10*d.*; merchants' bills, 25*l.* 3*s.*—leaving balance in favour of company, 77*l.* 6*s.* 4*d.*—It was resolved, that the adit level be continued driving west until next meeting, and that the operations be strictly confined thereto, and no other, without the consent of a meeting; and that the purser enforce the payment of all back calls, or forfeit the shares. A call of 10*s.* per share was made. A resolution was also passed, that Capt. John Hambly's report having been read and adopted be left with the purser.—Mr. Hitchens, we think, might have forwarded us a copy for publication, for the benefit of distant shareholders, though, probably, it was not sufficiently "keenly" to meet the public eye.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

COMBLAWN.—The prospects held out in this mine appear to be very encouraging. It is the intention of the adventurers to purchase a steam-engine of sufficient power to fork the water, so as to work the mine with that energy which its present appearances seem to warrant.

EAST CROWNDAL.—Since the appointment of the new management, a decided improvement has taken place in the tin mine belonging to this sett. The lode in the bottom of the shaft is said to be tin 12*l.*, while it can be brought to grass for about 4*l.* per fm. The prospects of the copper lode are not so encouraging, it being very poor, although it has a kindly appearance.

HEIGSTON DOWNS.—I am informed that they have an improvement, and many shares have changed hands. (This is confirmed by other letters, as well as the official report.)

SOUTH TAMAR.—This mine was never more promising than at present, and the future samplings will speak the truth of this assertion.

TRETHEVEY MINE.—I have been at Trethvey, and beg to tell you that they have not yet commenced pumping out the water; it will take them about a week doing, or at least I am informed so. There is no capstan on the mine. I expect they will have great difficulty in getting up their pumps, &c., as they have nothing but whim and rope as substitute for capstan. I hear a very good account indeed of the mine from every one here—there is not a single person who speaks ill of it. They all say she will make a first-rate mine, and I hear this from judges of mines. I am now convinced that there is a change of ground in the bottom of the shaft, as I see by the different sorts of clay slate. I also picked up some splendid stones of bright yellow copper, apparently very rich in quality. I believe the adventurers will have a prize here.

WHEAL MARY EMMA.—They have a good lode of tin—shares are in demand.

NOTICES TO CORRESPONDENTS.

* We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

The communications of Mr. David Muesel, on the Manufacture of Iron, and of Mr. F. W. Campin, on the Patent Laws, are unavoidably postponed.

* A Reader and Manufacturer.—We are not aware of any arrangement for the preservation of air-pumps from the corrosive effects of acid gases. The usual and most appropriate method of transferring such vapours from one vessel to another is by the pneumatic, or where the gas is absorbable by water, the mercurial trough. If for this particular experiment our correspondent cannot avail himself of either of these, we should recommend him to apply to Messrs. Knight and Sons, Foster-lane, Cheap-side, who possess every means of information on philosophical apparatus for all purposes.

* Luser.—In Mr. Brandt's patent for the bearings of railway carriages, he certainly does not claim merely the employment of friction wheels, but a peculiar method of applying them. We merely gave a plain description of the plan, and results which we had seen, leaving the public to judge for themselves. We are quite aware of the general knowledge of the power of friction wheels which has long existed, notwithstanding which there have been several patents for different modifications of the plan, among which we may mention that of Mr. Coles, Charing-cross. We believe Mr. Haig's patent is for the peculiar method of obtaining the motion; how far it is worth a patent, the proprietor is supposed to be the best judge.

John Reid (Polterrow).—The description of the brick machine alluded to, our correspondent will find in the Journal for January 29, 1848. It was the invention of, and patented by, Mr. Legros, and was for some time exhibited in South Molton-street. Bricks made by this process were much more porous and durable than those made by hand, from the great pressure they received, which also renders them better fitted for the kiln. One machine would make 6,000,000 bricks in a year, with a saving, over the old methods, of 12501. In the Journal for March 4, 1848, a lecture on this same brick-making machine, delivered by Mr. Schmidt, at the Western Literary and Scientific Institution, is given at length.

H. Smith (Southwark).—The communication on the adulteration of flour is too lengthy for insertion entire; we, therefore, give the spirit of it. In answer to Dr. Murray and Mr. John Mitchell, Mr. Smith says, that even unleavened bread, such as biscuits, &c., if adulterated with one-twentieth part of gypsum, or chalk, would be so hard that it would be impossible to masticate them. He acknowledges the use of alum in small quantities, and which the bakers would be glad to dispense with, but the public taste for white bread compels its employment. Potatoes also, he states, they are obliged to use, from the peculiar bread required in the London market, but they would be glad, if possible, to use flour alone, which would be more profitable.

* A Shareholder (Stockport).—We learn that South Wheel Maria has been suspended, or partially so, for the purpose of obtaining additional capital, and then proceeding with increased vigour. Mr. John Seccombe, of Tavistock, the purser, will no doubt readily furnish all the information required, as we believe he still entertains the most sanguine anticipations of the results, if worked with efficient means.

The letter of Mr. Copeland, on his Improvements in Blasting Operations, reached us too late for insertion this week.

* P. O. P. (Newington).—The most recent work on the Cornish pumping engine is by Mr. Wicksteed. There is also another, entitled *Pole on the Cornish Engine*. Both can be obtained of Mr. John Weale, High Holborn.

John Strathdee (Mauchline).—We have not been able to obtain any information as to the value of the property of the Demelcia Mining Company; but, after numerous enquiries for the parties connected with the company, we regret to state that all accounts we have received have been most unsatisfactory and inconspicuous.

* E. W. (Oswestry).—None of the recent patents for improvements in the smelting of zinc ores have been adopted in this country. The manufacturers in Belgium and Germany can manufacture it to equal the Silesian. When spelter was at 20s. per ton, some of our smelters reduced the ore. The present price is 15s. 10s., and is too low to realise a profit in England. Next week we purpose giving a brief account of the method of smelting zinc ores in Germany.

* A Subscriber (Wrexham).—The most recent work published on dialling, and which is well calculated for mining students, is *Nicholson on Dialling*. It can be obtained of Mr. John Weale, bookseller, High Holborn. The other work alluded to—Kennedy and Hackwood's *Tables for Setting-out Curves for Railways, Canals, Roads, &c.*—was noticed in the Journal of the 1st September, and was also published by Mr. Weale.

* A Regular Subscriber (Glasgow).—The case of Warner v. The Copper Miners' Company, is a friendly suit on the part of the plaintiff, praying the Court of Chancery to administer to the Trust Deed. It is expected that the Master will give his report before the termination of next March, or the commencement of the following month.

* An Engineering Pupil (Greenwich).—It was originally intended that the London and North-Western Railway should pass through Northampton. Among the reasons for opposition, it was urged by many respectable and wealthy graziers in the neighbourhood, that the smoke of the passing engines would seriously discolour the wool of their sheep; and that the repeated progress of the locomotive through the meadows would prevent the cattle from fattening, by the continual alarm and distraction which it would cause to the animals.

* G. T. (Tyndrum).—The rocks of the southern division of Eifeshire chiefly belong to the coal formation of geologists, and form a portion of the great coal field of the Forth. Glance, or blind coal, as it is sometimes called, is met with occasionally. Slate coal, pitch coal, and Cannel coal are also occasionally found together in the same bed, and sometimes in separate strata in the same pit. From a charter, dated in March, 1291, it would appear that coal has been worked in this country for more than five centuries. William de Overville then grants liberty to the convent of Dunfermline to open a coal pit in his lands of Blythneiff. But it has been alleged that this is not the first instance of a Scotch charter containing a right to work coal, for one dated 1284-85 is said to exist; from which it may be inferred that coal was worked in the lands of Tranent before that period. The principal coal works in the country at present are those in the parishes of Dunfermline, Dysart, Wemyss, and Markinch; but Enval is also worked at present, and has been so formerly, in the parishes of Torryburn, Inverkeithing, Dalgety, Burntisland, Abbotshall, Auchtermuchty, Scoonie, Largo, and Pittenweem. Limestone is also abundant in the same district. From the Charleston quarries, the property of the Earl of Elgin, upwards of 100,000 tons of it are annually raised, which quantity is either shipped or sold in its native state, or after being calcined.

* A Glass-blower (Newcastle).—Though extensively used by the Romans, no mention of glass is made by any of their writers before the time of Lucius. From the allusion to its use in the transport of wine which occurs in the writings of the Augustan age, glass would seem to have been then manufactured in considerable quantity. But, perhaps, the word usually translated glass, may refer to some natural production. Although an excellence in colouring glass was attained at an early period, which has never been surpassed, yet the art of producing it devoid of colour, the most difficult process in glass making, was then scarcely known. The Emperor Nero paid 6000 sesterces, or about 50,000l. of our money, for two small drinking cups with handles, the chief excellence of which consisted in their being colourless. The glass of the present age was of a very inferior quality, sometimes white, but generally of a bluish colour. Glass utensils have been found in Herculaneum, which city was destroyed A.D. 79. In the reign of Tiberius, a company of glass manufacturers established themselves in Rome, and had a street assigned them near the Porta Capena. The articles of their manufacture were few in number, and of inferior quality; neither did they make rapid improvements in their art, notwithstanding the large prices which were then given for glass of foreign manufacture in the Imperial city. In the year 220, they had increased so much in importance, and their manufacture was so considerable, that an impost was laid on it by Alexander Severus.

* An Enquirer (Wolverhampton).—According to Chaptal, there are 330 blast furnaces in France; and the amount of pig-iron annually made is about 100,000 tons.

* Three per Cent. (Cardigan).—The sinking fund was established in 1716. The author of the scheme was the Earl of Stanhope, but it was adopted under the administration of Sir Robert Walpole, it is commonly denominated his plan.

* J. P. (Austinfars).—The tin mines of Galicia were formerly worked by the Spanish Government. They were abandoned in 1798, either from the negligence displayed in their working and great expense, as is generally the case in Government establishments, or that they were not sufficiently rich to warrant a continuance of the operations necessary for their exploration. They are situated at Ciervas, one league from Montany.

* Miner (Camborne).—Yttracrite has only been discovered at Fendbo, near Fahlen, in Sweden, disseminated in quartz, and associated with albite and pyrophyllite. It is composed of oxide of cerium, lime, fluoric acid, and yttria. Its colour is violet, or a greyish red, often tinged in the same specimen. It occurs in amorphous masses, varying from a thin crust to half-an-inch in weight, and presenting occasional traces of cleavage, parallel to the sides of an oblique rhombic prism, whose lateral planes incline under angles of about 108 deg. 30 min. It is opaque, lustre glistening. Before the blowpipe, by itself, it loses colour, and becomes white, but does not fuse; though on the addition of gypsum it melts readily in an opaque globule. It is soluble, with residue, in muriatic acid.

* Enquirer (Brighton).—It has long been proposed to form a communication between the Atlantic and Pacific oceans, by means of the Isthmus of Panama. A very interesting account of a survey of a line across the Isthmus, which was made a few years ago by Mr. J. A. Lloyd, will be found in the *Philosophical Transactions* for 1830; and some account of a different line, by the Lake of Nicaragua, is given by Captain Phillips, in the *Journal of the Royal Geographical Society*, vol. iii. p. 275. There can be no question that a ship canal, if practicable, would be greatly preferable to any other equally slow communication; and a railway, again, better than a small canal. A line partaking of both has long been talked of.

* B. C. D. (Liverpool).—In later times we have had two or three believers in transmutation. In the year 1782, Dr. Price, of Galford, by means of a white and red powder, professed to convert mercury into silver and gold, and is said to have convinced many disbelievers of the possibility of such a change. His experiments were to have been repeated before an adequate tribunal, but he put a period to his existence by swallowing laurel water.

* A Tyro (King's College).—The usual process for obtaining phosphuret of calcium is this:—Select a green glass or porcelain tube, closed at one end, and about 18 inches long, and 1 inch diameter, and carefully cover it over with a clay lute, containing a very little borax. Put an ounce of phosphorus, broken into small pieces, in the lower end, and fill it up with pieces of clean quick lime, about the size of large peas; place it in an inclined position in the furnace, so that the end containing the phosphorus may protrude while the upper part of the tube is heating; then slowly draw the cool part into the fire, by which the phosphorus will be volatilised, and passing into the hot lime, convert a portion of it into phosphuret. Care should be taken that no considerable portion of the phosphorus escapes, and burns away at the open end of the tube, which, after the process, should be corked, and suffered to cool. Its contents may then be shaken upon a sheet of paper, and the brown pieces picked out, and carefully preserved in a well-stopped phial. The white pieces, or those which are only pale brown, must be rejected. The success of this operation depends upon the skillful management of the temperature, and the difficulty of heating the whole of the lime up to a proper point, which should be short of a red heat; for if the temperature be insufficient, no combination ensues, and if too high, the compound is again decomposed, phosphorus evolved, and lime remains. According to Berzelius, phosphuret of lime is best obtained by heating pieces of lime in a long-necked matrass over the flame of a spirit-lamp, and dropping phosphorus upon it. When the compound is perfect, it is reddish brown or chocolate coloured. When breathed on or moistened, it exhales a very strong and diffusive alliaceous odour, which it is difficult to get rid of. It heats, and even burns, if touched with damp hands; and when dropped into water, the action is immediate, and often violent; and the evolution of phosphuretted hydrogen continues for some time.

* We should feel obliged to all purveyors, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal.

* It is particularly requested that all communications may be addressed—

To THE EDITOR,

Mineralogical Office,

26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, DECEMBER 8, 1849.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

Perhaps no test could be more conclusive than that which the foreign trade of the kingdom for the current year furnishes of the wisdom of our recent tariff and navigation changes. Though we were advocates of the alterations when purposed, yet, certainly, we gave our humble voice for the experiments with considerable fear and hesitation. But now, when the commercial effect of those changes is partially ascertained, and we have a practical taste of their advantages with the just presumption of what will be the greater flood of benefits when the whole scheme comes into full operation, in these circumstances, we say, we are much in the case of the Queen of the South, who, when she came actually to see the glory of Solomon, declared that not a half of it, great as that was, had been told her. But it is a small, and comparatively fractional, part of these advantages, that we wish for a moment to direct the attention of our readers. Between the months of April and September, in this year, there were shipped in American bottoms, from the little district of Newport, some 70,000 tons of iron rails, the produce and manufacture of that immediate vicinity. The American vessels brought to this country, for this mass of our wrought produce, an equivalent value of bread stuffs, from the great corn-growing districts of the Union; so that, in fact, it was an exchange of the iron wealth of the Monmouthshire hills, for the farm produce of the vast valley of the Mississippi. This is one result of the new maritime law by which our foreign commerce is for the future to be regulated; and we do not know a more compendious method, than that which this instance exhibits, of making distant trading circles of the world contribute to the profitable occupation and the wealth of each other. Our mining produce, in its various kinds, will, we doubt not, find markets by methods analogous to the particular one which is here quoted, for already the ports of the Levant, the Baltic, and the whole of the North American sea board of the Atlantic, have declared themselves open to the entire produce of Great Britain, as our ports are by statute open to theirs.

It is a singular truism, and mineralogical records prove it from the earliest period, that at all times, and in every country, the interest of the miner has been subservient to that of the smelter. It would be a work of no small research and labour, to endeavour to analyse the causes which have invariably led to this result, but such is the fact; and we believe in no grades so intimately depending on each other as those of smelting and mining, a like instance will be found. We see, with the cotton manufacturers, that as soon as the price of the manufactured article rises in the market, that of the raw material increases in the same ratio; but with metals, a large advance must be obtained by the smelter before he thinks of offering the smallest advantage to the miner, and that often of such a trivial amount as scarcely, unless in large operations, to be perceptible. A similar parallel might be drawn between smelters and miners, as has lately been deduced from the conduct of railroad directors and their shareholders; the former are a compact and firm body, while the latter are divided, and, from want of union and discipline, incapable of any energetic exertions or strenuous efforts to free themselves from the chain which enthralls them. The fettered state in which the copper smelters have bound, and still continue to hold, the mining interest, has so often been discussed in our columns, and the means of remedying the evil been shown, without those interested having paid the slightest attention, or taken the least steps in the right direction, that we feel any further allusion to it would be futile, fully persuaded it is one of those crying evils which one day, sooner or later, will cure itself, though, probably, when the panacea is applied, it may be too late.

In our last Journal we made some remarks on the tin trade. We then stated that the price of tin in Holland was advancing; and we are happy to be enabled to announce, from intelligence lately received, that an increasing price may still further be looked for, while the demand for home consumption has improved. This should better the condition of the miner; but we fear, under the present system, the full advantage will not be reaped by the producer, the lion's share falling, as usual, to the reducer. On looking over the ancient annals of mining, we find that although the production of copper is but recent, not being worked to any extent before the reign of CHARLES the Second, that the existence of tin as a staple article of commerce has been co-eval with the discovery of the island; in fact, the richness of the tin mines is said to have been one of the causes which attracted the cupidity of the Romans, and planted the victorious eagles of CÆSAR on the chalky cliffs of Albion.

During the Saxon heptarchy we read of exports of tin, and of the trade between the Saxon lords of the soil and the still unconquered Cornubians. So important was its production considered by the kings of the Plantagenet dynasty, that special laws which are still in existence, and which constitute the foundation of the Stannary Courts were enacted. Notwithstanding it was the special care of the Legislature, we are perpetually discovering complaints from the mines of the depressed state of the trade, owing to the grasping exaction of the monopolists, to whom the miners were obliged to sell their produce. In the reigns of ELIZABETH, JAMES I., and CHARLES I., petitions and remonstrances were presented, praying for new regulations. The distance of the county from the capital, and the reports of interested persons, prevented these complaints from receiving that due consideration from the throne which their importance merited. Later in the reigns of WILLIAM and MARY and ANNE, similar memorials were drawn up. In the reign of the latter queen the tinners prayed her to fix the price at 4l. per 1000 lbs., and to make it penal if sold under. The politicians of that day were aware that the demand must regulate the price, and consequently, were wise enough not to interfere with the natural relations of the trade; but to other and well-grounded remonstrances the cabinet of that day, at the head of which was a Cornishman (Lord GODOLPHIN), turned a deaf ear to their complaints. This might have arisen from the fact that his lordship at that time was interested in tin-works in the county. We are perfectly aware that no legislative measures will remedy the ills of which the tin miners have complained; a radical change should take place in the present method; tin should be sold in the metal and not in the ore—this done, the condition of the miner will be ameliorated. It is with pleasure we hail the improved prospects for the coming year; we trust that both the capitalist and the labourer will be mutually benefited. We by no means would wish to raise class against class; but while the merchant and the smelter are making a profitable living from the metal, we think it but just that the miner, who has undergone the greatest toil to raise and dress the ore, should have a commensurate benefit with his collaborators.

From the late period of the week, and want of space, we were compelled to defer our remarks on the annual general meeting of the ALLEN MINING ASSOCIATION, held on the 30th Nov., and reported in our last week's Journal. From the report submitted to the shareholders, it appears that up to the 31st March last, to which period the accounts were made up, the loss on the year's proceedings was 588l. 6s. 6d. To counterbalance this, it was shown that the produce from the mines, for the year ending 31st March, 1848, was 2093 tons of ore, containing 12½ tons of copper, whilst the produce for the year ending 31st March last, was 1879 tons of ore, containing 127 tons of copper; thus showing a decrease in ore of 214 tons, and an increase in copper of 6½ tons. The produce during the last

six months had been gradually increasing, being, to the end of September this year, nearly 72 tons of copper. The directors account for the loss by the depreciation of the metal market, and the expenses they were obliged to incur in rebuilding their smelting furnaces, and give every hope to the shareholders that they will be enabled to declare an early dividend. We trust, for the sake of all concerned, that they will shortly find themselves in a condition to be enabled to fulfil this flattering promise; and we think, from the exemplary patience which the shareholders have displayed, through many years of doubt and reverses, they have richly earned some return for their capital. The property of the Allen Mining Association, although it has never been one of the leading mines, has always held a respectable position; in its best days, its prosperity was not so overwhelming as to excite envy, nor has its less fortunate epochs merited contempt. The greatest unanimity appears always to have prevailed between the directors and shareholders, and we have been spared the recital of the bickerings and mistrust, engendered by want of confidence, which it has been our painful lot to witness in more notorious and larger properties. A large capital has been expended on the property, in buildings, machinery, and houses, for, on their starting, there was not an inhabitant within miles of the mines, or a shed upon the ground. This, together with the enormous cost of the introduction of smelting on the spot, coupled with the numberless failures and costly experiments before that was brought to perfection, caused a large sum to be sunk, from which there, possibly, could be derived no return. From the extent of the lodes, and the territory comprised in the company's concessions containing several square miles, there is no doubt that future discoveries (for the whole of the tract is metalliferous) may repay them for the capital expended on the plant, while the discovery and profitable working of the Quenangen mines cannot but give an impulse to the spirit of mining discovery in Finmark. Mr. Thomas, the able manager of the mines, attributes the increase of copper to the fact of the tribute system being carried out there, and from all accounts that we have received, we believe this to be the case; our only surprise is, not that it has succeeded, but that it was never tried before. The mines have now been in existence for 23 years, and it is only within the last three that this system, which has been found to answer so well in England, has been attempted to be introduced there. We can remember, in the sales of ores at Swansea, some years since, seeing Allen ores of a very low percentage, almost so low that they scarcely paid the freight and returning charges. If at that period, instead of raising their ores by tutwork, and dressing them by day labour, the management had introduced the system of tribute, we apprehend a different result would have been obtained; in fact, to use the words of the last report, there would have been a decrease of ore, but an increase of copper. We are aware that, as in all new concerns abroad, the management at the Allen Mines had, in their commencement, great difficulties to combat with, and it was some lengthened period before an efficient staff could be organised. That formed, the work should have been proceeded with, not a lapse of 20 years allowed to have taken place before so important a step as the introduction of the tribute system was undertaken. The mines are situated so near the sea, that all charges for transport are avoided; the machinery is now in perfect order, and the smelting works reconstructed after the newest and most approved model; the management and staff appear to be economically and ably arranged, zealously co-operating with each other for the general weal of the concern; a more economical spirit of expenditure than formerly was the case has been introduced, and there is every prospect, if present appearances hold good, that the directors will be enabled to declare the promised dividend. We have never despaired of the ultimate success of the mines, and our prognostications have been verified; care, economy, and a judicious development of the company's resources being all that is required to render this property a compact and secure investment. They must not be lulled by any temporary prosperity, knowing, as they ought to do by this time, the insecure and variable character of the Norwegian lodes; new discoveries should be sought after, and reserves kept up; and particularly to avoid that precipice in which they were nearly engulfed some years since, by stopping, without pursuing the very necessary operations of driving and sinking.

In our last week's Number we made a few remarks on the subject of the NORTH BRITISH AUSTRALASIAN COMPANY, and a letter recently published by Mr. J. H. MURCHISON; since which that gentleman has received New Zealand letters by the last arrivals, which brought no information for the directors; the consequence is, Mr. MURCHISON is in possession of news down to six weeks later date than the shareholders, who are—as well they may be—seriously disatisfied with the palpable neglect of the manager. In consequence of this information, Mr. MURCHISON has published a postscript to his letter, in which he shows up some of the doings in New Zealand—proceedings which certainly confirm his hitherto expressed opinions, and fully justify his endeavours to arouse the apathy of the proprietors. Not only does it appear that the absurdity of raising the water 18 feet above the surface, for allowing it to work a water-wheel for the crushing apparatus, is persevered in, but this absurdity is brought to a climax by the manager suggesting the raising water from the sea by a small pump, to aid the dribble which comes from the mine. The expense of the absurd project cannot be less than 300l. or 400l. The shaft and engine are under a cliff close to the sea, and only just sufficiently elevated to avoid inundation. The smelting-works, about 1½ mile distant, appear not to have been more judiciously erected or better managed. Considerable quantities of ore have been wasted; and although the smelters have been out two years they have only completed a single furnace for running the calcined ore to a regulus, for want of fire bricks. Other items of gross mismanagement are given; three times the price for work which ought to be given is paid, and the workpeople themselves are astounded at the reckless outlay. There are lookers-on in the staff of management sufficient to manage half a dozen such mines; but the great want is a general superintendent, not merely a miner, to place things on a well regulated and economical plan. Unless a thorough change take place in the present management, and the appointment of such superior officer takes place, it is unequivocally stated that the mine, however rich, must be worked at a loss, and the whole affair go to ruin. It is a mine in which, if not managed prudently and economically, the losses must be great; the ore is poor, and, although the quantity may be large, the greatest care in keeping down unnecessary expenses must be attended to.

From the last arrival of New Zealand letters, to 21st of July last, we learn that the long disputed title to the Island of Kaw-wa had been decided in favour of the claimant; the plans of the ATTORNEY GENERAL, that the grant ought to be set aside for three reasons, not being supported by the evidence adduced. These reasons were—1. Because the grant was made contrary to the commissioners' report, and to the provisions of the colonial ordinances.—2. Because, at the time of the grant, Governor FITZROY had no power or authority to make a valid grant, and—3. Because the grant is not a good grant of the whole island, which contains 4690 acres, while the grant only mentions 2560 acres. The CHIEF JUSTICE of the Supreme Court of Auckland, in a luminous review of the bearings of the entire case, and explanations of the apparent contradictions involved, decided that the reasons urged on behalf of the Crown against the validity of the grant are insufficient in law; and that the same is a good and valid conveyance from the Crown to JAMES FORBES BEATTIE and his heirs, not for 2560 acres only, but of the whole island of Kaw-wa.

His Honour Mr. Justice CHAPMAN fully concurred in these views, and concluded that the grant was within the power and authority of the GOVERNOR to execute in July, 1844; and that he was not only entitled to the smaller number of acres named, but to the whole island. This decision had given general satisfaction in the colony, which was still further enhanced by the publication of the draft of a Crown Titles Bill, which the GOVERNOR had declared his intention of laying before the General Legislative Council in the following month (August), and which, certainly, is one of the most important and satisfactory steps in the annals of New Zealand legislation. It proposes to declare, in the most liberal and comprehensive spirit, and in explicit terms, the absolute validity of every grant of land within the province of New Ulster, made before the passing of the ordinance on behalf of the Crown by any governor, lieutenant-governor, or other officer administering the Government for the time being. It is intended by this measure that the titles to all the grants made by Governor FITZROY shall be effectually settled, and that without infringing any existing rights of original native owners; any such party satisfying a judge of the Supreme Court that his right and title has never been extinguished is to be remunerated by an equitable compensation, charged upon the general revenue of the province. The proposed measure has met with general approbation, and it was probable would pave the way to the esta-

ishment of greater confidence between the Government and the colonists than had hitherto existed.

With respect to the North British Australasian Company, this decision of the Supreme Court, declaring their title to the island of Kaw-naw good in law, is of very great importance; and should such judgment, and the proposed Crown Titles Bill, receive the Royal confirmation it will add materially to the prosperity of the company, provided a determination is come to, and acted upon, by the directors to complete a thorough reform in the administration of affairs, reduce all useless expenses, and keep up continuous and properly regulated correspondence with the manager in New Zealand, that the position of affairs there, notwithstanding the distance, may be tolerably well understood and acted upon here.

The unfavourable bias of the "Idler in the Asturias," is, as may be seen in another column, at length converted into words of propitious vaticination. This is an auspicious omen to all concerned; for his total independence of every party connected with the Asturian Mining Company, and his accurate sources of information respecting its property, leave little room to doubt that, when our correspondent speaks in an approving tone, there are fair hopes for the shareholders. We are not to be understood by this to pledge ourselves to the correctness of his views; but having attentively followed the course of his controversy with the former management, we are inclined to agree unconditionally in this, that any change from that management must be beneficial. It will be the shareholders' own fault, if, warned by the past, they fail for the future to keep over their representatives a constant and active surveillance, so as to raise a bar to all backslidings. Further the topics of this communication need no comment.

But upon the letter of Mr. MOORE, which we place beside it, some animadversion may be expected from us; and as emanating from a looker-on, who sees more of the game than the losing hand, it may not be injudicious to make some observations. This letter comes to us from the chairman of the committee of investigation, who is evidently the mouth-piece of the liquidators. As authorised by his particular colleagues, we suppose, he thus furnishes us with the materials to dispel any misapprehension as to promises, on the faith of which the shareholders are called on to give further credit to assurances, which are in part dependent on the directors. It is quite true that many persons, in listening to the qualification by some of the directors, dove-tailed into the apparently plain understanding established at the meeting of the 27th Nov., doubted Mr. MOORE's power to fulfil the terms of it, as it was confessed that no resolution to that effect could be conclusive. We equally hesitated to confide in the sincerity of the liquidators in suggesting this inducement to the meeting. However, there is no reason to apprehend any equivocation in the frank and resolute announcement under consideration. Manifestly the liquidators, on whose behalf we presume Mr. MOORE speaks, have taken up high and sure grounds as regards the shareholders on the one side, and towards the directors on the other. The prudence, promptitude, and firmness of their conduct entitle them, therefore, to the support of the proprietors, particularly as explanations are unreservedly offered to all who may doubt the propriety of further investment. Indeed, the candour with which every inquiry has been answered has given us a very favourable impression of the policy now ascendant.

The possible necessity referred to by Mr. MOORE, of appealing to the provisions of the Winding-up Act, is another subject of serious import to the members of this company. If this call had been the first of a long series of extortions to be contemplated, or had it been in violation of justice, we should be the foremost to counsel resistance, and advise the company by all means to wind up, discharge their debts, and close their dealings with a corrupt or incapable administration. Here, however, we have the last of it. The shareholders are only called on to meet their obligations as honest men, to which, if they be so lost to the influence of reason as to repudiate them, they ought to be held by every measure of coercion. In such an almost incredible contingency, we shall not regret to find some parties mulcted in ten-fold the amount now required. We well know, by the rueful experience of some of our friends, that from the Master's authority there is no escape. So far the liquidators are perfectly correct in their statement of the consequences of a winding-up—it should be the last and most desperate remedy. Nevertheless, it is clearly within the scope of the measures for which the liquidators are preparing in the event of the failure of the call. In that case they offer a just and ample guarantee to their supporters in the present emergency, to throw on the defaulters the penalty of their folly.

This is as it should be, and must be perfectly satisfactory to all who have had the courage to come to the rescue. It is only a just precaution of the liquidators to warn their co-partners that they are in such a dilemma. If any refuse to pay, and the company be resuscitated, none but the contributors to that result must be allowed to share the reward. If, on the contrary, the arduous exertions of the administration become unavailing, then should every one whom the blame of the miscarriage may rest be visited, without favour or affection, by the imposition of the extreme exaction which the law will sanction.

The necessity of establishing a searching and independent audit of railway accounts is now, we believe, very generally admitted, even by directors themselves; and none are better aware of the existence of such necessity than the black sheep among them, who have largely and fraudulently profited by the irresponsible nature of their appointments, and the loose and unbusiness-like manner in which the accounts have generally been conducted. The fear of a Government auditor being now before their eyes, something like a move is being made by the delegates from the various boards to reduce the auditing of the accounts to a system; and we have before us a circular, containing heads of a proposed bill to be introduced to Parliament for the purpose, drawn up by W. H. LORD, Esq., of Potney. It appears that the Great Western directors issued, on the 20th November, a circular to their proprietors, containing a series of clauses agreed to by delegates from the several railway companies, for the purpose of ascertaining the general opinion on the question of audit. In reply to this circular, Mr. LORD submits a series of proposed enactments, which, although probably not very palatable to many of the old directors, who have hitherto luxuriated in unlimited power, appear to us to be absolutely necessary, if shareholders generally are to have any right of control over their own property. Mr. LORD most justly observes:—"The Crown in their proposed legislation as relates to railway companies, treat them as public bodies, whose very existence must be made subservient to the public good, and in the management of whose affairs public control must be exercised, not only as a protection to persons who have embarked their property in the enterprise, but also as an equivalent for the extensive powers and privileges granted, amounting, in a great measure, to a monopoly, and which the public requires shall be fettered with wholesome restrictions and defined responsibilities. If, therefore, the railway companies will not propose such efficient measures as will correct existing evils, it is evident the Crown will interpose, by enacting such measures as they deem most expedient to meet the exigencies of the case, and which is rendered absolutely necessary for the restoration of Public Confidence." The writer then submits a series of fourteen heads of enactments for consideration, as follows:—

1. That railway directors shall remain in office two consecutive years only—an entire year intervening before they become eligible for re-election; that no house list be allowed, but ex-directors to be allowed a personal canvass.
2. That the amount of qualification for directors of the company shall be defined by the bye-laws; and that no shareholder shall be eligible for office, or allowed to vote upon any question, until he has been six months on the register.
3. That no director shall be allowed to continue in the direction of the trunk line who is a shareholder in any of its branches at the time any measure is brought forward, relating to any fundamental change as to their existing relations, nor to any company under similar circumstances; and that it be made incumbent on the auditors to ascertain the fact.
4. That there shall be two auditors in each company, to be appointed by the shareholders (proxies being allowed), irrespective of the directors, who shall not be allowed to vote on the question—such auditors being shareholders, or otherwise, but subject to the same regulation as to nomination as is applicable to directors; that they shall have a fair remuneration for their services; that the employment of a public accountant shall be compulsory—the appointment remaining with the shareholders, irrespective of the directors, voting by proxy being allowed.
5. That the audit shall be continuous; that the auditors shall report to the directors from time to time, but at least once in the quarter; that if any question shall arise between the auditors and directors concerning the application of the funds of the company, the directors shall, upon the requisition of the auditors and accountant, call a meeting of the shareholders, to whom the point shall be submitted; that if the directors decline complying with this request, the auditors and accountant shall be empowered to call a meet-

ing; that the majority present at such meeting shall bind the directors, but no proxies allowed; and that the auditors and accountant shall be entitled to attend this and all other meetings, *ex-officio*.

6. That the auditors and the accountant shall report to a half-yearly meeting of the shareholders the nature of their audit, and its results, and their opinions, either jointly or separately; and that the accounts so audited, together with the report or reports, shall be circulated amongst the shareholders ten clear days before the half-yearly meeting.

7. That under no circumstance shall the denomination of shares be altered, under the delusive plea of a bonus added thereto.

8. That there shall be uniformity of financial statements in all companies where practicable, the form being prescribed by the Act; and that no deviation be allowed but under the express sanction of the railway board, and the cause assigned for such deviation.

9. That accounts passed by the meeting shall be final only upon data furnished; that no lapse of time shall prevent the re-opening of accounts when fraud can be substantiated; that the directors and auditors shall pursue the investigation upon a *prima facie* charge of misapplication of the company's funds; that the sense of a meeting of shareholders shall be taken as to what measures shall be adopted; that in case the directors decline calling a meeting for this purpose, the auditors and accountant jointly shall have the power so to do; and if the latter decline, then the party making the accusation shall be privileged to bring the same before the first meeting of shareholders, whether special or otherwise, the decision of the majority present being final.

10. That at least 14 days' notice be given of the day of election, both by advertisements and circulars—the latter enclosing the forms of proxies to be made use of, the shareholders being bound to return the proxies when not used, or subject to fines, to be imposed by the bye-laws, and no warrants issued for their dividends until the fines have been paid.

11. That the shareholders of companies shall have a veto upon the appointment of solicitors, with the power of dismissing them by the decision of a majority of the shareholders present at any of their meetings, upon reasonable cause being shown.

12. That the names of parties who have declared themselves candidates for the office of directors shall be transmitted, after their qualifications have been found correct, in the circulars, to be issued previous to the election, as likewise the names of auditors and accountants, who have signified their intention of going to the poll, and that the names of the auditors and accountant may be inserted in the same proxy as for directors, the shareholders having the power to substitute other names than those enumerated.

13. That in order to facilitate legal proceedings against directors and ex-directors for breaches of trust, the name of the corporation shall be allowed to be used by the decision of a majority of shareholders, to be summoned for that purpose—such decision being the sanction for the solicitor's proceedings, and for the corporation seal being attached when required; that the auditors and accountant be empowered to call such meeting upon the board of directors declining; and in case of no meeting being specially called, the decision of a majority of the first meeting of shareholders that subsequently takes place shall confer the necessary powers, if deemed expedient.

14. That no new bye-law of election be repealed, without the consent of the shareholders first had and obtained; that an annual list of the shareholders be published, the address being added when known—the qualification for respective offices indicated by stars, or other device—the financial statement of the last report added—the guarantees or responsibilities for existing or contemplated railways detailed—the bye-laws published at length—together with the names of the directors, bankers, solicitors, secretaries, and principal managers.

Mr. LORD comments on each of these clauses as they proceed, for which we have not space; but he clearly shows that "continuous" audit will impose "continuous" watchfulness—the master's eye being upon the proceedings of the directors, will act as an effectual check. That a uniformity of accounts is absolutely necessary to prevent "cooking," that no rule would conduce more fully to the welfare of companies than the appointment of solicitors as by clause 11, for, at present, being under the appointment of directors, they make the interests of shareholders a secondary consideration; that the objections to public auditors are that barristers will be almost exclusively employed—the machinery thereby rendered more expensive, and the audit less efficacious than when conducted by persons accustomed to mercantile transactions; that the appointment being permanent, the advantages of mutation will be lost; that the appointment being by the Crown, persons will be appointed who possess interest, often to the exclusion of individual merit; that the shareholders having no voice in the appointment, may have an inefficient person imposed upon them without the power of redress; that the stimulus to good behaviour, with a view to future re-election, is done away with; that private auditors will obtain information by courtesy, where those imposed by the public will be denied; and that it will be the precursor to railway companies becoming eventually Crown property.

These proposed enactments are well worthy the favourable consideration of the delegates and all railway shareholders; for unless some such law is proposed by themselves, Government will do it for them; and we conclude in the words of the writer, recommending all shareholders to do their duty by appointing a committee to watch the progress of any bill that may be brought into Parliament, whether by the Crown or the delegates of railway boards; further seeking information bearing upon the subject, and well digesting the same, in order that as full and perfect a measure may be had as it is possible to obtain.

In another column will be found a lengthened report of the proceedings at a meeting of CAMERON'S STEAM-COAL COMPANY, held on the 6th inst.; and well pleased are we to find that the lessors have evinced a disposition, which has been readily responded to by the shareholders, to combine their efforts in promoting the objects of the company, and their own interests, in making those concessions, on the one side or other, which common sense and prudence dictates. The present case is one which closely approximates to that of the Asturian Company—the one and other having being shamefully mismanaged, and a vast capital expended, without that ability or control being displayed, on the part of the direction, which the shareholders had a right to calculate upon. There are several points which well deserve attention as regards the past; while the present are of equal, if not of greater import, with respect to the future working of the colliery, and at the same time securing to the shareholders those important benefits which, we honestly believe, will be the result of the prosecution of the works with economical and honest management. It will be observed that certain advances have been made by the chairman, under circumstances which we consider are by no means warrantable; and, although approved by the standing counsel of the company (Mr. COOPER), could never be sustained in a court of law or equity, in the absence of any information being afforded to the shareholders, who have been kept in ignorance of these secret compacts, entered into between the directors themselves—one of which contracts is, we believe, more than two years old. It is for the shareholders to do as they think well, or best fit; but, so far as we are concerned, in advertising to such acts, we claim to ourselves the right of exposing abuses wherever we find them.

Having said thus much on one subject, we at once advance to the present position of the company; and having had opportunity of investigating its affairs, and the prospects it presents, we have no hesitation in saying, that if the shareholders come forward boldly, and advance the necessary capital to resuscitate the company, form a new administration and management, retaining those directors or officers who are useful, but not such as may have lent themselves to fraud and misrepresentation; then may the company prosper. We cannot but consider that the parties attaching their names to acceptances to their co-directors, on behalf of the company, have, perhaps, unwittingly committed themselves, in the opinion of the proprietors, without first having consulted them, but they may be protected by the deed; yet it is somewhat too bad, that out of a board of five directors, three shall advance monies, and the other two shall, on behalf of the company, guarantee the repayment. That the advances made by certain of the directors were highly beneficial to the interests of the shareholders at large, we can very well imagine, but that certain personal liabilities were incurred, which rendered such course almost indispensable, we believe, will be acknowledged. To leave the past, and look forward to the future, we have only to say, that with economical and honest management of the affairs of the company, and the absence of lawyers, we consider there is not only an extensive field of coal, but a wide field for the investment of capital, so as to be highly remunerative. One thing, however, is certain; a change must come or the scene.

In conclusion, we recommend all parties to pay up their calls, to appoint honest and independent directors, and to bear in mind that *captains* in the navy, however honourable, are not *captains* of mines.

IMPORTATION OF CHINESE TIN.—An importation of 2800 slabs of tin has taken place by the vessel *John Betty*, arrived in the docks from Canton, and the vessel *Fortitude* has also brought 1246 slabs of tin from Whampoa, as part of her cargo. The importation of tin from the Chinese empire is not of common occurrence, and the arrivals are of some interest and importance.

RUSSIAN COPPER.—The following arrivals of copper have taken place in one day from the Russian ports:—The vessel *Comand*, from St. Petersburg, has brought 1411 ingots; the *William and Jane*, from St. Petersburg, 1200 ingots; and the *Isis*, also from the Russian capital, has brought 2811 ingots of the metal, the produce of Russia; and, in each instance, consigned to parties in the metropolis.

The Great Northern Railway Company are preparing to take the whole of the coal trade along their loop-line into their own hands, and have commenced the building of coal staiths at all the principal stations on the line. It is stated that they will sell the Silkestone coal at Lincoln at 9s. per ton, whereas the price in the yards is 13s. At King's-cross station, London, they propose to retail the same coal at 17s. per ton, the price being in the metropolis 27s.

PREVENTION OF SMOKE FROM FURNACES.

On Wednesday last, we inspected a furnace which has been constructed for the steam-engine boiler at the General Post-office, and which bids fair to come into very general use, where owners of steam-engines, or furnaces of any description, are desirous of getting rid of that nuisance to large manufacturing towns—dense black smoke. It has been constructed by Mr. Samuel Hall, who has, for so many years past, turned his almost undivided attention to the improvement of furnaces, and was patented by him in March last. The principle upon which this furnace is constructed is that of self-supplying and smoke-consuming; the back portion of the fire-bars being always covered with coke in a state of bright combustion, and the gases being produced from dry distillation in front, are consumed as they pass over the incandescent fuel in their passage to the chimney. The furnace bottom consists of 33 moveable fire-bars, placed laterally from front to back beneath the boiler, sliding in V shaped grooves, formed in the bearers. At the front end of the bars are two projections downwards, between which are 33 eccentric wheels, placed in different phases on one shaft, in such manner that every alternate three eccentrics are moving in different directions, by which means the bars in rotation are pushed forward and pulled backward in 6½ minutes.

On the upper portion of the bars are step-like projections, on which the coal is thrown in a hopper in front of the furnace—the effect being that the right-angled ends of the projections force the fuel gradually forward; but, on the backward stroke, the inclined planes pass beneath the coal without disturbing it; it is thus gradually spread over the whole surface; and the incombustible residue, or clinker, passes over the back of the bars, where there is a trap-shelf to pass it, when required, into the ash-pit. In front of the ash-pit, at a sufficient distance to allow the necessary current of air for complete combustion, is a sheet-iron door, which, when down, concentrates the draft to the front portion of the fire, where the coal is being ignited, and is thus gradually carried onward until it becomes in an incandescent state, and not requiring so much oxygen. On raising this door, and allowing the current of air to rush through the entire of the ash-pit and fire-bars, the fire is instantly slackened; and, by opening the clinker-shelf behind, the air passes completely beneath the fire, which is instantaneously neutralised; but, on closing these doors again, the roaring draft is instantly restored, and the fire resuscitated.

The delicacy with which the supply of air may be regulated, and made to impinge in the right spot for the complete combustion of the fuel, is one of the chief points in this construction of furnace; and as the coal is supplied in a mass, which may be made to last one, two, three, or more hours, there is not so complete a dependence on the attention of the fireman as in ordinary furnaces, nor is there a continual opening the furnace doors, and raking the fuel as in other grates, which is so objectionable. When first making up the fire, there is a light smoke seen from the chimney for about four minutes, after which nothing appears to escape during the entire day's operation. A slight inspection of this furnace is sufficient to satisfy the most sceptical, that Mr. Hall has accomplished the great desideratum of getting rid of the smoke nuisance; and the plan is well worthy the consideration of the Health of Towns Commissioners, the local provincial boards, and the Common Council of the City of London.

NEW ARRANGEMENT FOR EMPLOYING STEAM EXPANSIVELY.—Mr. John Ericsson, C.E., of New York, has just secured a patent for an improved construction of engine for using steam expansively. The patentee claims as new the placing of the axis of the crank shaft in single-acting beam engines nearer to a line parallel to the axis of the cylinder, and passing through the axis of vibration of the beam, and thus obtaining a more regular mechanical action on the crank by applying the steam expansively. In expansion engines, having two cylinders, with pistons moving in opposite directions, he also claims such an arrangement, that the large piston, during its return stroke, may have a vacuum on each side thus described. When combined with the smaller cylinder, connected with the boiler, and both ends in connection with one end of the larger or expansive cylinder, so that, when the piston of the smaller cylinder is acted upon on one side by the steam, there shall be a vacuum on the other side; and when the steam is acting by expansion on the larger piston, it shall be in connection with both ends of the small cylinder. He also claims the simultaneous employment of two single-acting expansion crank engines, with their cranks on one and the same shaft on opposite sides of the centre, at an angle of 180°.

RECKLESS NEGLIGENCE OF RAILWAY OFFICIALS.—The midland counties, particularly the Valley of the Trent, has, during the prevalence of the late rains, been inundated to an extent which none of the inhabitants remember to have reached for upwards of 30 years. The Trent, from its source to its junction with the Humber, is one inland sea, occasionally extending for miles on either side; and on the banks of the smaller streams in Derbyshire, Leicestershire, and Staffordshire, it is the same, but to a more limited extent. An immense deal of damage has been done to numerous culverts, bridges, and railway works. In the neighbourhood of Burton-upon-Trent, on Monday, a portion of the embankment was washed down, delaying some of the subsequent trains for a considerable time; and from Monday morning early until Tuesday morning, the whole of the traffic upon the Erewash Valley branch was entirely stopped. Now, however, the broken portions of the embankment have been repaired, and the trains have recommenced running as usual. About 20 yards of embankment has been washed down on the Trent Valley line, and a similar catastrophe happened on the Lincoln line, near Thurgarton. A most serious accident has occurred during the week on the Nottingham and Lincoln Railway, by which, according to a correspondent of the *Times* of yesterday, the mail train is lying a complete wreck; engines and carriages being smashed to pieces. This was occasioned by a bridge or culvert giving way from the weight of water behind it; and the worst part of the business is, that it was known to the officials, and, consequently, ought to have been known to the directors, that the bridge was not sufficiently strong to allow a train to pass, in consequence of the continued action of the water. While waiting for the up-train, by which he was detained two hours, he heard the porter at the station say to a farmer, who informed him a bridge had given way, that "he (the porter) had been up to the bridge yesterday, and they knew it must go." And although the clerk of the station and the porter had not heard of the accident, they seemed perfectly aware when it had taken place. The writer could not ascertain if any injuries had been received, or deaths caused; but offers to give evidence, if required, to the fact that the insecure nature of the bridge was known to the authorities.

PUNISHMENT OF AN ENGINE-DRIVER.—At Sheffield, on Friday, Thomas Owen, late an engine-driver on the Manchester, Sheffield, and Lincolnshire Railway, was charged before the Borough magistrates, with having negligently caused a collision on that line, thereby endangering the lives of several persons, and occasioning loss of property to the extent of 1000l. He was convicted, and sentenced to pay 10l., or, in default of payment, to two months' imprisonment.

EXPRESS TRAINS ON THE LONDON AND NORTH-WESTERN RAILWAY.—With the 1st of the month an alteration took place in the route of the express trains on this line. These trains now take the old route by Birmingham, instead of traversing the Trent Valley line; the arrival at Euston-square, though the route is a few miles further, being accomplished by the usual hour of 11 o'clock. The alteration, besides being a convenience to Birmingham, will effect a saving of some 5000l. per annum.

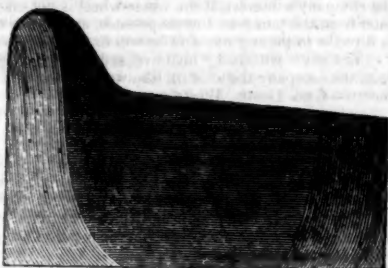
THE EQUITABLE ASSURANCE COMPANY.—At the quarterly general court of directors, held on Thursday last, the statement of the position of the company's affairs, as seen by the decennial investigation of the finances, showed the assets to be 4,955,000l. stock in the Three per Centa, and 4,186,839l. in cash at the Bank and on mortgage, making, with premiums and interest due, a total of 8,558,047l. The liabilities of every kind were 5,642,544l. leaving a surplus of 3,215,503l. Mr. Morgan (the actuary) read an interesting paper on the present state and future prospects of the company, from which it appeared that the sums paid in for premiums and entrance money since the company was established, in 1762, amounted to 19,067,636l.; by improving the same at compound interest they had paid out 25,336,687l.; of which 8,000,000l. was paid in the last 10 years; by the extension of business, the engagements on the 1st of January next will be 14,000,000l., and to effect all this the entire expenses have only been 418,236l. It was resolved to apportion 2,118,372l. among the 5000 oldest assurances, and 1,102,131l. would be carried over as a rest for the next ten years, charged with a bonus of two per cent. per annum on the claims falling due in that interval among the 5000 oldest assurances.

GRAND JUNCTION CANAL.—At the half-yearly meeting of proprietors, on the 4th inst., a dividend was declared, at the rate of 5 per cent. per annum—leaving 1413l. to be carried to the rest. The tonnages of the half-year ending the 30th of June last were stated to have amounted to 40,896l. (being 2609l. more than in the corresponding six months of the preceding year), and the entire report, confirming as it did the anticipations lately held out of the possible revival of canal traffic, was received by the shareholders with satisfaction.

REGENT'S CANAL COMPANY.—At the half-yearly meeting of proprietors, held at the offices, on Wednesday last, the report was received and adopted; it stated that the traffic, which had been greatly depressed, presented satisfactory appearances of revival. In coal and building materials there had been a great deficiency, but in September coal regained the average, and building materials had improved in traffic. The profits for the half-year, to Sept. 30 last, were 11,057l. 6s., being sufficient for a dividend of 10s. per share, with a surplus of 348l. 5s. to add to the reserve fund. The entire receipts for the half-year were 23,818l. 10s. 8d., and disbursements 12,261l. 5s. 8d.—leaving profit, 11,057l. 6s.

THORNEYCROFT'S
PATENT RAILWAY AXLES, RAILS, AND TYRES.

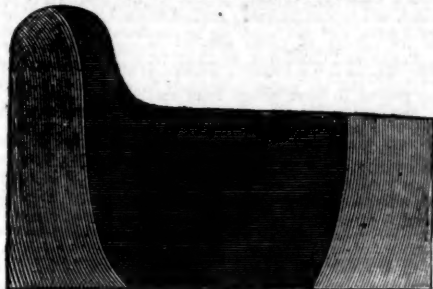
RAILWAY TYRE.—SECTION No. 1, HALF SIZE.



The middle, or wearing, part of this tyre is composed of chrysaline charcoal iron, the hardest and soundest iron made. The outward edges are made from a mixture of India charcoal pig with the toughest fibrous iron—the whole made upon an improved principle into one homogenous mass. These charcoal tyres are warranted better and more durable than any tyres made in England.

Price—£15 per ton net at the works, up to 3½ cwt. each.

RAILWAY TYRE.—SECTION No. 2, HALF SIZE.



The middle, or wearing, part of this tyre is composed of the best refined chrysaline puddled iron. The outward edges are of the best No. 3 fibrous iron, and put together upon an improved principle into one homogenous mass.

These tyres are warranted quite equal to any made in Staffordshire.

Price—£10 10s. per ton net at the works, up to 3½ cwt. each.

BEST STAFFORDSHIRE TYRES—£8 10s. per ton at the works, up to 3 cwt. each.

Fig. 1.

SECTION OF BRIGGS'S PATENT COMPOUND AXLE.

Scale ½ inch to a foot: parallel axle.



Price—£14 per ton net at the works.

Fig. 2.

SECTION OF BRIGGS'S PATENT COMPOUND AXLE.

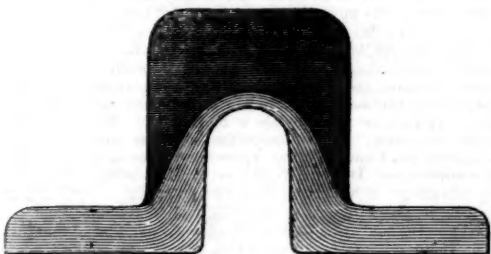
Showing the extent to which the internal bar is welded solid at each end, drawn down in the middle half an inch.



Price—£15 per ton net at the works.

PATENT ANTILAMINATING CHARCOAL RAIL.—SECTION No. 1, HALF SIZE.

Price—£10 per ton net at the works.



Patent Antilaminating Rails, made from the same quality as the best S & iron.

Price—£7 10s. per ton net at the works.

The upper, or wearing, part of these two sections of rails is made from antilaminating charcoal iron, much harder than any other iron, perfectly free from lamina. The under, or fibrous, part from best No. 3 puddled iron.

PATENT ANTILAMINATING CHARCOAL RAIL.—SECTION No. 2, HALF SIZE.

Price—£10 per ton net at the works.



Patent Antilaminating Rails, made from the same quality as the best S & iron.

Price—£7 10s. per ton net at the works.

Rails of the same sections are made from puddled iron, quite free from lamina in the wearing part, but soft and less durable than charcoal rails.

This principle is applicable to any kind of rails.

I beg to inform the railway public, that the machinery for testing the strength of axles, and the strength and soundness of the tyres, is now ready; and I offer it to the public without any charge for its use, to try any one's make of axles and tyres they may think proper. A machine has been designed, and is now making by Messrs. Fox, Henderson, and Co., for proving the quality and durability of tyres and rails by actual wear and tear, the same as when at work on a railway, at any speed you like. The name of the designer is, I trust, a sufficient guarantee for its efficiency; in fact, it will be so true a test, that it must prove satisfactory to the most fastidious mind; and, so soon as it is completed, it shall be offered to the public, on the same terms as the testing machine above-mentioned.

Shrubbery Iron-Works, Wolverhampton.

G. B. THORNEYCROFT.

Original Correspondence.

ON THE MANUFACTURE OF IRON RAILS.

SIR,—Referring to Mr. R. P. Davis's letter, on the manufacture of iron rails, he takes upon himself to advise me to make myself acquainted with what is going on in the world, before giving the authority of my name to the letter of the "Staffordshire Ironmaster." I am not responsible for the assertions contained in that letter, beyond my opinion about the quality of the rails referred to, made at Gospel Oak, every word of which I vouch for the truth of; and I must have something in the shape of argument produced, before I can agree with Mr. Davis about the statements made by the "Staffordshire Ironmaster." If Mr. Davis wants proofs of the truth of some of the principal statements in the letter, respecting the deterioration in the quality and manufacture of the rails at the present day, he has only to refer to the very talented pamphlet on railways, by Capt. Huish, and he will find in those valuable and lucid statements the most convincing proofs of the truth of the "Staffordshire Ironmaster's" assertions. If he wants further proofs than are therein contained, which I think he hardly will, I will undertake to give it on the lines of railways east, west, north, and south, for I have noticed them in all directions, and find that the rugged state of the rails from splitting, laminating, and crushing, give the clearest proof to my mind that, instead of their being made from the best material, they are made from the very worst, as stated by the "Staffordshire Ironmaster;" and I can assure Mr. Davis, that this is not only my own opinion, but the opinion of some of the most respectable practical ironmasters in this country.

I am sorry to differ in opinion from my friend Mr. Davis; but I will promise him one thing, the difference in opinion shall not destroy one particle of the long friendship subsisting between us—at least, as far as I am concerned; and as he has been so kind as to give his advice to me to make myself acquainted with what is going on in the world—a very wide sphere, certainly—I, in return, advise him to make himself acquainted at least with what is going on in the railway world, and then I am sure he will pause before he sends such another letter to appear in your Journal.

Wolverhampton, Dec. 5.

G. B. THORNEYCROFT.

P.S.—I beg to inform Mr. Davis, that I shall very shortly have a machine ready for testing the quality and durability of rails beyond all question of opinion; they will have the same wear in six days as on a line with 30 trains a day in 10 years, 12 days for 20 years, and 18 days for 30 years. This will give railway companies better information than all the opinions in the kingdom.

ON THE MANUFACTURE OF IRON RAILS.

TO MR. R. P. DAVIS, RHIMNEY IRON COMPANY.

SIR,—Having seen your letter to Mr. G. B. Thorneycroft, in the *Mining Journal* of last week, in which you pronounce the statements of my letter of the 28th July to be slanders, I have to assert in reply, that there is not one statement made in that letter which you, or any ironmaster in the kingdom, can successfully contradict. That its whole contents are incontestable truths I have the fullest evidence—evidence not only arising from my own practical acquaintance with iron-making, but also the present condition of the rails on nearly every line in the kingdom; and these, supported by the very able and talented report of Capt. Huish, all combining to prove that rails have been made, and are now being made, of the veriest rubbish which can take the name or form of iron; and mark! all professing to be made from best iron.

In Capt. Huish's report, page 8, it is stated that no less than 180½ miles of new rails have been laid down since 1845. Again, at page 10, that a further quantity of 106½ miles will have to be relaid during the next three years; and at page 32 are the following remarks:—"In the case of some rails recently supplied by a house in Staffordshire, it has been found that bars, apparently of good texture and manufacture, have laminated to a considerable extent, after being down not more than three months; while bars supplied from the same neighbourhood (though not by the same house) have been found, at the end of 12 years' use, to be almost destitute of the tendency to laminate."

Now, why have not all the rails that have been laid down 12 years stood the same wear and tear as those referred to? Simply because the best material originally used has not been continued, nor the proper processes applied to make the best iron—I mean that kind of best iron from which the Messrs. Walkers, of Gospel Oak, made the rails for the Leeds and Selby line. Now, it is very evident that rails can be made to last 12 years, and also that rails can be made which will laminate in three months; the former, I presume, costing somewhere from 10s. to 20s. per ton more than best bars; the latter costing somewhere from 20s. to 40s. less than best bars, and yet, forsooth, all of the very best iron. No doubt Mr. Davis is able to solve this iron problem on other grounds than my slanders, and that the rails he has referred to, as laid down on the London and North-Western Railway, bid fair to overturn all my statements, for they have stood all the tests to which they have been subjected, and are several pounds per ton cheaper than the rails recommended by Mr. Thorneycroft. Would not Mr. Davis have acted the part of a wise man, while parading these rails before the public, had he stated definitely when the rails were laid down, what were the tests to which they had been subjected, and how many pounds per ton they were cheaper (for they were several) than the rails made by Mr. Thorneycroft. Mr. Davis may rest satisfied that the time is gone by when vague and indefinite statements will take the place of sterling truths. I have, therefore, but to assert, in conclusion, that the rails which are made and sold for less than from 10s. to 20s. per ton above the price of best bars are not worth laying down, as they will soon be found in the same ranks of split, laminated, and crushed rails, so widely spread on almost every line in the kingdom.

Dec. 4.

A STAFFORDSHIRE IRONMASTER.

CARBON AND IRON.

SIR,—Cinder is the general term applied to everything in the shape of waste or refuse about iron-works. In some recent letters, which you have done me the favour of inserting in the columns of your valuable Journal, where I have mentioned cinder, I have alluded to that particular form, an alloy of iron, which is produced in the puddling-furnace. On my first directing attention to the manufacture of iron, the circumstance which appeared to me most unaccountable was the quantity of cinder formed in every operation, and this, by the sanction of the highest chemical authorities of the day, being all regarded as silicate of iron; while the pig-iron operated upon contained but a very small per centage of silica, and the finished bar nearly as much. In the experiment which Mr. Mitchell proposes making, to test the presence of cinder in bar-iron, he will ascertain the amount of oxygen. If my theory of the constitution of bar-iron is correct, there will be left in the iron minute particles of graphite. In this state, it is my opinion that carbon may by inadvertence be mistaken for silica. Mr. Mitchell will perform a most important service by giving this the closest attention. I consider the presence of the peculiar cinder formed in the puddling-furnace (and which, notwithstanding Mr. Mushet's total repudiation of the idea, I still regard as a carbo-oxide) to be an advantage in merchant bar-iron—that is, in iron intended to be wrought again into some other form; this alloy renders the iron more pliable at a moderate heat. I fully agree with Mr. Mushet in his remarks, that "little or nothing is really known why iron possesses this singular property of welding, and we want to know more of it;" but I must beg to differ from him in the opinion that it is a property of the iron itself. I cannot give up the idea that welding depends upon the joint action of oxygen and carbon. I have observed, sometimes, when a bloom of very pure iron and a bar of iron, used for a staff, after frequent heatings, would not adhere together, the workman has dipped the staff into small coal and applied it to the bloom; they immediately adhered together or welded. Perfectly pure iron possesses the power of cohesion in a most extraordinary degree, but not that of welding. I merely advance this as an opinion. The welding property, the absence of which is the grand cause of redshortness in iron, is communicated by an accidental admixture, and this I regard as a most important advantage where iron has to be re-manufactured—that is, worked into some other form. On the other hand, I consider the presence of cinder, or any alloy, a disadvantage, or rather very objectionable, in iron which has been wrought into a form for permanent use, such as sheets, boiler plates, railway bars, the tires and axles for railway carriage wheels, and many others, amongst which are the links "of the chain cable to resist the racking of the elements." The fibres of bar-iron I regard as the pure metal, and for the above purposes, instead of having iron an aggregate of innumerable minute fibres, I would have each article to consist of one entire solid fibre, which would be the case if the simple pure metal had to be drawn out per

se; and this is the ultimate object I have in view; but the presence of an intermediate body preventing the cohesion of the entire mass of pure metal, it passes into distinct fibres.

Cinder is brittle when cold, and I consider that by a species of grinding the cinder in iron used for railway purposes is reduced to dust, and thus lamination is caused, and the fibres loosened. There is no state in which iron is so tough as that of the simple pure metal, and that such should always prove redshort, as Mr. Mushet observes, I look upon as a very strong case in favour of my theory. I do not say that refining is resorted to with the view of supplying the elements of cinder; I believe the object to be quite different, although the effect is what I state. I am aware that pig-iron has been for many years puddled, without being first refined; but I know that the puddlers used to want more wages for it, because it took more time and work than fine metal. I think I should have some difficulty in fusing oxide of iron, without an addition of some earthy matter or carbon. If the former I should certainly obtain glass; if the latter, what I term carbo-oxide.

"Wootz" refers to some experiments upon charcoal and coke iron. Unluckily I have not got his letter at hand. I do not think that iron is ever smelted with charcoal from the common ironstones. This is done with coke, so that coke iron is likely to contain the elements of glass, silica, alumina, lime, and oxide of iron; while charcoal iron, smelted from ores containing little or no earthy matter, would not yield glass, although it might contain carbo-oxide. In puddling pig-iron, it is now pretty generally the custom to throw a quantity of cinder into the furnace, which makes the pigs work as freely as refined metal. I have not time to follow Mr. Mushet minutely through his letter, but think I have replied to the most essential points. I hope to have an opportunity of resuming the subject.—T. H. LEIGHTON: *Chem Amman*, Dec. 4.

CARBON AND IRON.

SIR,—Mr. R. Mushet, in his remarks on the diamond-cutting process, proposed by Mr. Baggs, states that he differs with him respecting the non-vaporisation of the diamond, and other forms of carbon, in contact with malleable iron. He states that it is an undoubted fact, that soft iron, cemented in close vessels with pieces of charcoal, is gradually converted into steel, although no portion of it is actually in contact with the fragments of charcoal. This is strictly true; still it does not at all prove that any of the charcoal is actually converted into vapour, or true gaseous carbon, for the effect may be explained by the conversion of the carbon into carbonic oxide; for sufficient oxygen would always exist in the pores of the charcoal, and in the interstices left in filling either a crucible or the ordinary cementing cases, to commence the action, which would then continue indefinitely. The following experiment, by Le Play and Laurent, may be cited:—A porcelain tube was closed hermetically at one end; to the other was accurately fitted a cock, with a bent tube dipping into mercury. In the tube was placed two small porcelain trays—one containing peroxide of iron, the other charcoal. The tube was then exposed to a strong red heat for several hours, and the result was the decomposition of the oxide of iron, and its conversion into carburetted. This change was effected thus:—The oxygen of the air in the tube was converted, at the expense of the carbon, into carbonic oxide; this, in its turn, was transformed into carbonic acid by the oxygen of the oxide of iron; this last gas again takes up carbon, to be reconverted into carbonic oxide. The gaseous contents of the tube are increased by the assumption of the oxygen of the oxide of iron to form gaseous compounds of carbon. During this change bubbles of gas are expelled, and collected over the mercury into which the tube dips. During the first part of the experiment the reduction of the iron alone takes place, but in proportion as that goes on, the carbonic oxide is decomposed by the metallic iron, which appropriates part of its carbon; and the gas thus converted into carbonic acid again takes up carbon, to be again deprived of it. This goes on until the iron has assumed a certain portion of carbon, and then all action ceases. The per centage of carbon in this compound has not been given. This I conceive is exactly that which takes place in the cementing chest, and offers a more simple explanation than that involving the actual vaporisation of carbon. The experiment proposed by Mr. David Mushet will, however, completely decide this matter. I have, fortunately, a sufficiency of diamond for two or three experiments, and, as soon as they are completed, I will send you the results. Mr. R. Mushet, again, states that cast-iron, exposed to a melting heat for a considerable time in a close crucible, loses its carbon by degrees, and becomes first steel, and finally soft iron. It is, I think, natural this should be the result, and yet the carbon need not be actually vaporised.

The following attempt at explanation is based on some results I have very often obtained in experimenting on Berthier's method of determining the calorific power of fuels by fusion with oxide of lead, and in the first stage of some kinds of silver assay. In an ordinary furnace, the crucible containing the material to be fused, or otherwise operated on, is placed within about 2 inches of the bottom—that is, 2 inches above the fire-bars. Now, the oxygen of the air supplied to the furnace is at the lower part, and about this height, wholly converted into carbonic acid; above this, and extending to the top of the fuel, this carbonic acid is converted into carbonic oxide; so, in fact, an ordinary wind furnace may be compared to the blowpipe flame—that is, it possesses two distinct portions, the one oxidising and the other reducing; so much for the furnace. The crucibles in ordinary use—that is either Cornish or Hessian—are more or less porous, more especially to gases. This was first of all proved in relation to earthenware tubes of similar material by Dr. Priestley, who found that, during the transmission of gases through earthenware tubes surrounded by burning fuel, the gas escaped outwards into the fire; while at the same time the gases of the fire penetrated into the tube, although the gas within was in a compressed state. All that has just been stated in respect to the two distinct conditions of combustion in the furnace, and the passage of the gases of the fire through closed crucibles, I have often found borne out by actual experiment; thus, if a perfectly closed crucible, containing litharge, be kept in fusion for a considerable length of time in the upper part of a furnace, a button of lead will generally be the result; if, on the other hand, a similar crucible be placed within an inch or two of the bottom of the furnace, no reduction will take place. Now, these facts appear to me to completely explain all that Mr. R. Mushet has stated as regards the conversion of cast-iron into steel and soft iron by continued fusion in a close vessel. We will suppose a quantity of cast-iron placed in a crucible, fitted with a lid, and that cemented in the ordinary manner with fire-clay. The crucible is placed at the lower part of the furnace, and, consequently, in an atmosphere containing much carbonic acid—in other words, an oxidising atmosphere. The crucible contains a certain proportion of air that deprives the iron of some carbon; infiltration of carbonic acid then begins. This, finding carbon at a high temperature, immediately combines with it, forming carbonic oxide, a portion of which escapes through the pores of the crucible; whilst another portion of carbonic acid enters to undergo the same change, and thus the whole of the carbon may be removed.

Again, Mr. R. Mushet states that iron in the state of fusion loses its affinity for carbon, and will give out, but not absorb, the latter. This is true to a certain extent—that is to say, that iron containing carbon when in fusion, loses that carbon when fused in an oxidising atmosphere, but not when fused in a reducing atmosphere. Mr. Robert Mushet also says the affinity of soft iron with the vapour of carbon appears continually to augment in proportion as the temperature is raised, until the point of fusion is attained when all mutual affinity ceases. How does Mr. Mushet reconcile this statement with the fact, that if soft iron be melted, then carbon added, the crucible covered, and the heat kept up, that the soft iron will be converted into grey iron by absorption of carbon? This is a point Mr. Mushet has himself often argued. Mr. David Mushet's remarks on Mr. Leighton's cinder theory, I take to be conclusive, pending the course of experiment.—JOHN MITCHELL: *Dec. 3*.

CHEMICAL ACTION ON IRON—VENTILATION.

SIR,—It is well known that hot iron, rolled in pounded prussiate of potash, and then plunged in water, becomes coated with a very hard surface. I should be glad to know, from some of your talented correspondents, the chemical action that takes place during the operation; also the reason why roasting the tap cinder of the puddling-furnace enables it to withstand the heat, which otherwise it would not, when applied to line the furnaces in which the iron is puddled?

An exceedingly simple and effective ventilating apparatus for collieries may be contrived in this way:—Make a wooden square box any convenient length and size, and within this let there be fitted a square wooden piston, lined at the edges with leather—a wooden rod to be fixed through the piston, and to work through the ends of the box, which must be closed

up, except a hole at each end, for the escape of the foul air, over which is to hang a common flap-valve. By the side of this box a compartment is to be made, communicating by valves with the top and bottom ends of the wooden cylinder, or air-pump—this compartment to be connected with the upcast shaft, or trumpling, and the pump worked from the engine beam, fly-wheel shaft, or in any convenient way. It would take very little power, as the air would not be wire-drawn, and consequently, without pressure on the piston; and I think an air-pump of this description would ventilate some of the largest collieries at a cost of but a few pounds, and, perhaps, prevent those fearful and destructive explosions so fatal to the workmen, when, unfortunately, from accident or carelessness they occur. A moderate-sized pump, made in this way, would draw from the mine 30 to 50 tons of foul air per day, and a little ingenuity would soon contrive the best way of making and putting it to work.

Ettingshall, near Bilston, Dec. 3.

S. W. SMITH.

MINING INVESTMENTS—HOME AND FOREIGN.

SIR,—A Lover of Fair Play, in your Journal of the 24th Nov., having made some remarks on my letter of the 3d, and having mistaken my object in alluding to foreign mines, which was not to single out any particular mine, with a view of depreciating its real value, but merely to make a comparison with the home mines, and to show that, if the enormous sums expended in foreign mines had been judiciously applied to the development of the mineral resources of the United Kingdom, the results would have been very different. I have no motive, or object, in selecting the Alten Mines, nor the least wish, or intention, to depreciate their value, any more than the other foreign mines which I selected from the share list in your Journal. If "the value of a thing is what it will bring," the Alten Mines, agreeably to the share list just quoted, is worth about 12,500*l.*; but if the share list is incorrect, it is no fault of mine. The plant of a mine, however, may be of great value while used for the purpose for which it was required, and may have cost a very large sum of money, but the same, when a mine is abandoned, does not in general realise one-half of its first cost, nor would a *turnpike-road, ten miles in length, wharfs, or second-hand shafts*, realise a large sum, even if offered for sale in the most palmy days of mine working. "A Lover of Fair Play" may be interested in the Alten Mines, but I am not. I intend that British capital may be more profitably employed at home than abroad; and if parties are foolish enough to squander millions in foreign mines, while they might reap an abundant harvest at home, verily they have their reward. But let any person take the trouble to look at the share list of foreign mines, in your Journal, and he will be very dull of apprehension if he fails to discover that there has been as much British capital lost in foreign mines as would have been ample to work all the mines in the United Kingdom. "A Lover of Fair Play" says—"The mineral deposits of Ireland are, I am well aware, if properly developed, capable of giving employment to thousands of her starving children. The blind and ridiculous prejudice which has deterred capitalists from embarking their capital in that distracted priest-ridden country is the general insecurity of life and property, the unceasing agitation, the secret combinations, the base ingratitude, and hatred against everything that is English. I am not here about to enter into a political discussion; but 'Anglo-Celt' must have resided in Ireland to little purpose had he not discovered, long ere this, the truth of what I have asserted; and I fearlessly say, that life and limb are less secure there than in many parts of Spain or Mexico during their most lawless periods. Let Irish landlords and capitalists do their duty, by commencing the development of their own resources, and British capital will soon follow; they who would receive assistance must first endeavour to help themselves, and not trust, as has hitherto been the case, to British alms and aid." My eye!—what a furious piece of writing. Really, Mr. Editor, one would suppose from the foregoing that "A Lover of Fair Play" was the great champion of Exeter Hall; but it is perfectly clear that he has been brought up in a narrow system of views, starved on a few prejudices, a mere handful of bitter herbs, with no seasoning added in the cooking, and his ideas made up in a stiff raised crust of bigotry, difficult to digest. This is his diet, and he does not ask for a crumb beyond it.

I am, however, ready to confess that I have resided in Ireland to little purpose, inasmuch as I have failed to discover that life and property is less secure in the counties of *Cork and Kerry* than in *Spain or Mexico*. I am also free to confess that I have not resided in this country as a *partisan*; but I must take the liberty to tell "A Lover of Fair Play" that he knows nothing whatever of Ireland, if he fearlessly asserts that life, and property is less secure in the counties of *Cork and Kerry* than in any part of *England, Scotland, or Wales*; and, if he refers to your Journal of the 7th of July last, he will find that I am as much an admirer of the system hitherto pursued by Irish landlords as he is himself. As to the unceasing agitation, where is it? Does he allude to John O'Connell and a few imbeciles in Dublin? Surely no man in a sane state of mind could call that an agitation? But when a man's mind is jaundiced, all the world looks yellow; and hence "A Lover of Fair Play" has conjured up in his imagination a host of ghosts and hobgoblins, and jumbled them altogether, in the shape of priests, agitations, and hatred to everything English. Really do we live in the 19th century, in what is called an enlightened age, or do we live in an age of darkness, intolerance, and bigotry of the worst description that ever existed? "A Lover of Fair Play" pronounces, without hesitation, the Asturian Mines to be one of the finest properties in Europe, if properly managed; and Ireland I pronounce, without hesitation, would be one of the finest and richest countries in Europe, if properly managed?—*ANGLO-CELT: Mount Gabriel, County Cork, Nov. 28.*

THE DIAMOND.

SIR,—My letter upon the subject of the diamond, which appeared in the *Mining Journal* of Nov. 24, was written partly with a view to suggest a more easy method for the possible reduction of the stone, and partly with a hope of eliciting the observations and opinions of others upon the physical characters of one of the most interesting substances in the whole category of chemical elements. The real constitution of carbon with reference to caloric, and the particular degree of heat required for its liquefaction or vaporisation, are circumstances respecting which it must be confessed very little is known. That iron is capable of being converted into steel by means of the diamond is a fact which appears to be generally credited, but the method whereby that conversion is effected remains a matter of dispute. With regard to the opinions entertained upon this subject by two of your correspondents, I can truly say that the name of Mushet is so closely and so honourably identified with one of the most important manufactures of this kingdom—the manufacture of iron and steel—that if the question thus arising out of Morveau's experiment were strictly of a practical character, I should at once feel that any theoretical ideas which I might entertain relative to the matter would weigh as nothing when placed in juxtaposition with the experience of either of the gentlemen now alluded to; but the case is otherwise.

The question itself is not marked by any great practical tendency, though it is certainly replete with philosophical interest. These precious gems will never be employed as a substitute for common charcoal in the manufacture of steel. Of this we are quite sure—unless, indeed, the rich valley of "Es-Sindibad of the Sea" should chance to be re-discovered, and diamonds should become even more plentiful than Californian gold. But, after all, the realisation of such a supposition is not impossible, for every day's experience brings stronger and more demonstrative proof that "truth is stranger than fiction," and no one will deny that many of the wildest dreams and most extravagant fancies contained in the *Arabian Nights' Entertainments* have been completely cast into the shade by the startling realities which science has achieved within the last half century.

We must, however, regard the matter now before us under its immediate aspect only, for it would be utterly useless to base any argument upon the mere possibilities of the future. All things considered, then, it is my firm opinion that the diamond is not volatilised, *per se*, under any circumstances of ordinary occurrence; and I ground this opinion partly upon the experiments of Smithson Tennant, and others, and partly upon analogical considerations, arising out of the perusal of Dr. Faraday's paper "On the Existence of a Limit to Vaporization" (*Phil. Trans.*, 1826).

Whether carbon assumes the gaseous form by entering into chemical union with oxygen or hydrogen, previous to its combination with the iron, is another consideration, and a very likely one, if either of these gases should happen to be present. It occurred to me that this might be the case, immediately after I had written my last letter. The idea did not originate, however, from any theory recently advanced in your columns, as alluded to by Mr. David Mushet—for such had, unfortunately, escaped my notice. It arose entirely out of the old experiment of Citizen Clouet, the particulars of which were communicated to the National Institute of France in July, 1798. In that experiment a mixture of the filings of

barriers' nails and pulverised white marble was submitted to the action of an intense heat, and a bar of steel was obtained. It is here obvious that the nascent carbonic acid, which was eliminated from the marble, must have been decomposed by the iron, the carbon absorbed, and the oxygen liberated. But though this experiment proves that steel may be produced by the action of soft iron upon carbonic acid gas, yet it does not prove that the same effect may not take place, when the two combining elements are only present in a solid form. The suggestions of the Messrs. Mushet, for performing an accurate repetition of Morveau's experiment, are highly interesting, and, if acted upon, they are well calculated to set the disputed question at rest. For the present, we must be content to rest upon conjecture. Mr. R. Mushet observes, in one part of his letter—"Though the diamond may not be vaporised when exposed *per se* to an intense heat, still we may imagine that, when enclosed, and in contact with soft iron at a high temperature, certain electro-chemical causes may combine to vaporise the former substance, and enable it to penetrate and combine with the iron." There cannot be a doubt that every chemical or physical disturbance of the atoms of matter is accompanied by the development of this ubiquitous and remarkable agency, but whether in the instance before us it operates in promoting volatilization, is a matter which can only be determined by experiment.

There is one other remark of the same gentleman to which I wish to recall his attention. It is this—"The effect of cementing a piece of charcoal, in contact with a smooth plate of soft iron, would be to create a nucleus of steel-grained iron in the surface of the plate where the charcoal rested, and an elevation of surface from the crystalline arrangement of the particles constituting this nucleus, which would leave a corresponding depression in the touching plane of charcoal or carbon." Without in any way disputing the accuracy of this statement, I may observe that I find a great difficulty in reconciling it with the phenomena observable in the recarbonization of steel plates, according to Mr. Perkins's system of multiplying engravings, where it is impossible to detect the slightest alteration effected by absorption upon the original surface. I shall be glad if your correspondent can throw some additional light upon this part of the subject.

December 8.

ISHAM BAGGS.

THE DIAMOND.

SIR,—Your intelligent correspondent, Mr. Baggs, has recorded his scepticism as to the vaporisation of the diamond in high temperatures, albeit the counter-conclusion of Sir Humphry Davy. I quite agree with him, that the transference of the material of the diamond to the negative pole of the voltaic circle, in Dr. Hare's experiment, is an equivocal evidence. Still I am loth to surrender what I venture to consider a legitimate inference, as deduced from more recent experiments on the diamond, to the individual one of M. Guyton de Morveau.

The very ingenious practical value of Mr. Baggs's proposed auxiliary to the lapidary, in reference to the cutting and polishing of the diamond, as grounded on the experiments of Clouet and Sir George Mackenzie, and I may also add that of Mr. Children, solicits, however, our more immediate attention. Mr. Baggs's recommendation hinges on the conversion of soft iron into steel by its combination with the material of the diamond. I readily grant that his view is at once novel and ingenious; but I do not see, I must confess, what advantage could be derived from its adoption. Of course, that portion of the diamond expended in the conversion of soft iron into steel would be entirely lost. No doubt, the cutting and polishing of the diamond is both an expensive and a tedious process; but it must not be forgotten, that while the cutting of the Pitt, or Regent, diamond (from which his illustration is taken) cost 5000*l.*, the diamond dust and chips sold for more than 7000*l.* I may again refer to some of my own experiments on the diamond.

Portland-place, Hull, Nov. 28.

J. MURRAY.

MR. ALFRED SMEE'S SPECULATIONS.

SIR,—You have given us, in a recent Number of the *Mining Journal*, a brief exposition of the psychological speculations of Mr. Alfred Smeë. All I hope is that he may not get beyond his depth, or lose his way in an unknown province, beyond the legitimate ken of finite mortality. I must honestly confess, I either do not understand his lucubrations, or, notwithstanding his salvo, cannot but conclude he has adventured sufficiently far already. The world of mind and the region of spirits lie beyond the rule and compass of physics. That worthy individual, Mr. Crose, unhappily committed himself in the matter of insect creations, and so may this ingenious gentleman, in his ardour and imaginings, wander from the path of legitimate inquiry. It may be said I am too sensitive and suspicious, and it may be so; but I have not yet forgotten Mr. Smeë's eccentric speculations touching the potato disease, eliminated in a goodly volume—reputed, however, by every individual observant of the phenomena. Attentive as I have been to the various phases of the potato disease for years, I cannot conceive how Mr. Smeë's peculiar view could have originated.

This caveat is not altogether uncalled for. Mr. Grissenthwaite once opined that the time might come when the chemist would be able to manufacture pine apples, peaches, &c., in his laboratory as good and fair as tree and season could produce! and even Baron Liebig, that eminent and distinguished man, in a moment of abstraction, hastily recorded that, by-and-by, organisms might be formed in the laboratory—so Mr. Smeë, though an excellent electrician, may yet be in error.

Portland-place, Hull, Nov. 28.

J. MURRAY.

THE ANEROID BAROMETER.

SIR,—The indications of the aneroid have proved most satisfactory. I say this advisedly, after an extensive series of observations, made during a period of many months, by the elegant aneroid supplied to me by Mr. Dent, the eminent chronometer maker, to whom the public are under many obligations for its introduction. In sensibility it far outwits the indications of the common barometer; and on the sea coast, in reference to its preage of the coming storm, the aneroid barometer must prove an invaluable boon.—J. MURRAY: *Portland-place, Hull, Nov. 28.*

GLASS VENTILATORS.

SIR,—I am inclined to think very favourably of the glass ventilators for windows, the explanation of which was introduced in your penultimate Number. I advert now to the invention of *sills* in the glass pane. When in London, some time ago, I saw their operation tested, and, as far as I could then hurriedly judge, it seemed to be entirely satisfactory. I forget the address at this moment; but I shall hope to be able to prove it more decidedly by adopting it to a glass frame, and shall then be able to speak more definitely.—J. MURRAY: *Portland-place, Hull, Nov. 28.*

PEAT CHARCOAL.

SIR,—Mr. Jasper Rogers's peat charcoal has been introduced to the public (and so considered in the *Mining Journal*) as a *disinfectant*. I confess I cannot see on what sound principle it can be so regarded. It has even been said *fresh roasted coffee* possesses this character. I have elsewhere considered the relations of peat charcoal to agriculture.

That charcoal, especially when recently prepared, possesses *antiseptic* properties there can be no doubt, and its functions in this case are easily understood. Its vast absorbent capacity in reference to gaseous media, for instance, hydrochloric gas—above all, that septic poison, sulphuretted hydrogen—explains it at once; but as it is *unchanged thereby*, and charcoal must evolve it again on an increment of temperature, it is clear that charcoal is not legitimately entitled to the epithet *disinfectant*; by which I understand those agencies alone which act by *decomposing* the noxious miasm, or septic poison, and thus *destroy* them. Chlorine and nitrous acid do this. I would call things by their right names.

Portland-place, Hull, Nov. 28.

J. MURRAY.

PEAT CHARCOAL FOR THE MANUFACTURE OF IRON.

"Nothing new under the Sun."

SIR,—In your last Number appears a statement as to the patent for the use of peat charcoal in the smelting and pickling of iron, taken out 80 years since. Allow me to say, I believe the attempt was made even at an earlier date, but it failed then and since, because the charcoal made from the usual peat of commerce is too friable to bear the blast of the furnace. My patent is for the preparation of peat in a peculiar manner, the fuel from which being, in fact, as hard as coal before being carbonised, although without any foreign substance; hence the charcoal of the peat is as dense as coal charcoal, whilst it is entirely free from sulphur and pyroigneous acid; therefore, in fact, a more desirable fuel for the manufacture of iron than even wood charcoal. This is part of the "novelty" of my patent. I claim no credit as to use of peat charcoal in the manufacture of iron; I only claim the mode of making peat charcoal fit for that purpose, and infinitely preferable to any other fuel.

JASPER W. ROGERS.

Sanitary Engineering Offices, St. James's-street, Dec. 7.

THE KAW-AW MINES—NEW METHOD OF OBTAINING POWER.

SIR,—In the *Mining Journal* of Nov. 24 I observed a description of a new method of obtaining power at the Kaw-aw Mines, New Zealand. This certainly is an age of wonders, as it is termed by the writer of the article, and I should consider a new wonder added to the many, if he can show me that less power is required to raise a certain quantity of water 18 feet than would be obtained by the same quantity, or the same water, falling the same distance. I should recommend him (for his own information and the company's interest, if the water-wheel is not made) to discharge the water from the pump as low as possible, and attach the crushing apparatus directly to the engine; and he will find that the poor engine will do more work than it will do by his novel and highly ingenious plan, and will save to the company the cost of the water-wheel and its necessary requirements.—GEO. LOSH: *Whitehaven, Dec. 3.*

SAFETY FUSE.

SIR,—We beg to refer your correspondent, "S. S." to our advertisement in your columns of this day, which entirely refutes the only important assertion in his letter. We beg to express our thorough contempt for the mode used by the writer to injure us.

W. BRUNTON AND CO.

Penhelfick Fuse Factory, Dec. 4.

SAFETY FUSE.

SIR,—The sundry letters on the above subject, which have recently appeared in your and other journals, are evidently the productions of competing manufacturers of safety fuse, and, therefore, the praise covertly bestowed by each on his own, and the abuse lavished on his rival's manufacture, are hardly worth notice. But when assertions are made, reflecting on the want of due precaution on the part of managers of mines in the selection of the proper qualities of fuse for the use of the miners under them, and also that a great increase of accidents has occurred since the manufacture of safety fuse has become more general, I desire to give the most unqualified contradiction to such assertions; and I am prepared to prove that, for many months past, not a single accident has happened within the great range of mines situated in the parishes of Gwennap, Redruth, Illogan, and Camborne, resulting from the use of inferior safety fuse. Some accidents have occurred in blasting; but, in every instance, it has been proved to have arisen from carelessness in the operation of tamping; and even accidents of this nature, so far from having increased, have, happily, been of much rarer occurrence within the last 12 months, than within the same time at any former period.

My recommendation to each manufacturer of safety fuse is, to confine his attention to making as good an article, and at as cheap a rate, as possible. The most successful in these two points will be sure to command a good trade.—MINE AGENT: *Camborne, Dec. 5.*

IMPROVEMENTS IN MINING—WALKER'S COAL RIDDLE.

In the *Mining Journal* of 23d January, 1847, we inserted several testimonials from colliery proprietors of the advantages obtained by the use of Mr. Walker's patent riddle, for separating the slack from the round coal on its arriving at the pit-brow; and in the Number for the 6th February following a letter appeared, from a correspondent in the neighbourhood of Pendleton, near Manchester, descriptive of its superiority over the old method of working sieves by hand labour. Although these patent cylindrical riddles are now in pretty general use in Lancashire, it is singular that in the Durham and Northumberland collieries, the use of the old inclined and flat riddle is still persevered in; and as we think it a great improvement, and that in calling the attention of coal-owners to it we are only rousing them to their own interest, we make no apology for giving some further description of its operation. Instead of riddling the slack from the coal at the bottom of the pit, as generally practised in Lancashire, by the use of this machine, which is set in motion by the steam-engine, the coal and slack is sent out of the pit unriddled, at a considerable saving in wages, lessening the labour of the collier and drawer, and, what is of the most importance, insures the whole seam being sent up, and a larger quantity of best coals saved. The machine insures the perfect separation of the slack from the coal, and, by its revolving action, disengages all dust, leaving the coal clean and bright; and, during the operation, the slack is all loaded without further expense.

In the case of coals for house fires, which require much careful screening, the machine effects the object most completely; and as a proof that its wear and tear are almost nominal, we may state that at one colliery two have been in use upwards of four years, and are said to be as good as they were the first day they were erected. It is capable of cleaning from 400 to 500 tons per day without taking more than half a horse power from the engine; and, taking all circumstances into account, it is estimated that the cost of erecting and working the patent riddle is actually less than that of the common riddle, particularly when the wages of the riddlers are considered. Among the testimonials is one from Mr. Forster, of Standish Colliery, who says, "I must confess that it far exceeds all other methods of screening that I have had the opportunity of seeing in the coal districts of Northumberland, Durham, Yorkshire, and Lancashire. I find there are many advantages to be derived from the adoption of the cylindrical riddle over those in general use. Its revolving motion completely prevents the breakage of the coals, and makes a complete separation of them from the slack. Besides, there is a great saving in time and labour; and I have no doubt that one riddle, properly erected and worked, would effectually screen 400 tons of coal and slack in 10 hours."—The following are a few of the testimonials from among a long list forwarded to us:—

Mr. W. Pease, of Haigh Colliery, says, "I have much pleasure in stating that your riddling machine, which we have had in action for a few weeks, fully answers our expectation, and it completely frees the coal from slack and dust, at a very small expense in labour. It effects a considerable saving by preventing the large admixture of the small coal with the slack, which ordinary riddles do not prevent; besides this, it affords every facility for picking the coal, and loading it into boats or waggons, at a light expense."

Mr. G. Smith, of Sankey Brook Colliery, says, "I bear testimony to the efficiency of your patent coal riddle, which I consider far superior to the coal screens used in the north of England, where I have been engaged for the last 20 years. The separation of slack by your riddle is more complete than by any system I have yet seen. It is worked more economically, and produces a cleaner and better sample of coal than can possibly be had by hand labour, or the screens used in the Newcastle district."

Mr. J. Pearson, of Ladyshore Colliery, says, "We have had your patent riddle at work for upwards of four years, and have great pleasure in bearing testimony to its efficiency; and at the same time state that it is as good now as when erected; and I consider it capable of screening from 300 to 400 tons per day."

Messrs. Andrew Knowles and Sons, of Agcroft Colliery, says, "We have great pleasure in acknowledging the utility of your patent riddling machine, which we have had at work a few months, and which has given us great satisfaction, both in the economy of working, and the separation of the slack from the coal."

Mr. J. Ellis, of Copnall Colliery, says, "We have had your patent riddle at work for the last three months, and I can truly say it makes a complete separation of slack from coal; it also affords every facility for picking the coal, inasmuch as they come gradually into the waggon. It is the best thing I have ever seen for riddling, either for cheapness, efficiency, or expedition."

Mr. Elijah Helm, of Burnley and Habayham Collieries, says, "We have lately erected two more of your patent riddles, and I am in duty bound to hear further testimony to the admirable manner in which the separation of slack from round coal is effected, and at so trifling an expense. No colliery ought to be without the patent riddle, when the separation of slack from the coal is required to be made."

Mr. W. Lancaster, of Ince Hall Colliery and Camel Works, near Wigan, says, "I have great pleasure in informing you that your patent riddling machine gives us every satisfaction; we find a very great saving in its use, and intend having them at all our pits."

LONDON IN 1543.—This very curious and instructive work has recently (for the first time) been engraved from the drawing made by Antony Van der Wyngrede, a Flemish draughtsman, employed by Philip II. of Spain. It was purchased by the late Mr. Sutherland, and on the decease of that gentleman it was transferred, with the rest of his collection, to the Bodleian Library, at Oxford, where it remains. Mr. Whitlock has done good service by making this vivid and faithful copy, and it will be hailed with delight by all who take any interest in the history of the British metropolis. Having been taken in the 34th year of the reign of Henry VIII., it is full half a century earlier than Hollar's map, and it includes delineations of many buildings which had perished when Hollar's plan was undertaken. Many of the buildings here copied from Van der Wyngrede's sketch have yielded fresh information to many who had familiarised themselves with every previous illustration of early London architecture; and those who have everything to learn on the subject will be both pleased and instructed by seeing for the first time St. Paul's, the City wall and gates, St. John's Hospital, Baynard Castle, Suffolk House, the Fleet River, Holborn Bridge, &c., as they existed in the early part of the 16th century.

A. Published by Whitlock and Ryde, Richard-street, Falmouth.

A CONTRIBUTION TO SCIENCE.—A letter has been addressed to the council by Lord John Russell, offering to place at the disposal of the Royal Society, for scientific purposes, this year 1000*l.*, and probably the same amount in successive years. It is quite unnecessary for us to say that the offer has been accepted. Government subsidies to Science and her sisters are not sufficiently numerous to make an announcement like this uninteresting to our readers. The money given is not the sole good; the measure marks progress, while it aids it.

New Patents.

(From the *Mechanics' Magazine* of this day.)

SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

D. SMITH, New York, America, lead manufacturer: Certain new and useful improvements in the means of manufacturing certain articles in lead. The patentee proposes to employ a tower of 20 inches in diameter, and 50 feet high, shaped at top like a funnel, and at bottom like a truncated cone. The pouring vessel is to be made with holes in the bottom as usual, and fixed in the funnel, while an annular hollow vessel is adapted to the bottom of the truncated cone, and rests on a reservoir of water. The annular pouring vessel is to be also perforated with holes at top, through which an artificial current of air is to be forced up the tower by a fan or other blowing machine. Supposing the current of air to be made to travel twice as fast as the falling molten metal, the latter will encounter as much air as it would in falling through a tower 150 feet high, of the ordinary construction, and probably more, as the air would be nearly stagnant. The metal falls through the hollow centre of the annular vessel into the water reservoir, which is furnished with a shoot to conduct the metal to a suitable receptacle. Or, the artificial current may be created by exhausting from the top of the tower, and allowing the air to flow in at bottom, in which case the hollow annular vessel will be dispensed with.

Claim.—The application of an ascending artificial current of air to a descending current of metal in the manufacture of leaden shot.

H. TREVITT, Suburb, Middlesex; and T. R. CRAMPTON, C.E., Buckingham-street Westminster: Improvements in locomotive, marine, and stationary engines; and also in the connecting apparatus of marine engines. Messrs. Trevitt and Crampton's improvements in locomotive steam-engines are as follows:—1. The axle of the driving wheels is placed behind the fire box, which, as well as the water tank, is supported on the same frame with the tubular boiler. The water tank is placed underneath the boiler, while, to make room for it, the eccentrics, pumps, &c., are placed outside the two frames. The boiler is supported, or caused to articulate on three points; one being the centre of a transverse spring, the ends of which bear upon the axle boxes of the driving wheels, and the other two the centres of two longitudinal springs, placed on either side of the boiler, the two ends of each of which rest upon the axle boxes of the running wheels on their respective sides. 2. The top of the outside shell of the fire box is made flat and stayed to the top of the fire box, also made flat, in the same way as are the sides in ordinary cases; care being taken to leave sufficient steam space between the two. 3. The axle of the driving wheels is placed under the fore-end of the tubular boiler, and connected to cranks fixed on the ends of a transverse rod, which are driven by coupling rods from the piston rods of the steam cylinders. 4. The application of the preceding arrangement to a locomotive engine which has the axle of the driving wheels placed behind the fire-box. 5. Tapping a main screw near the crank-end of the paddle or screw-shaft in marine engines, and fitting thereon a collar with an interior screw. The crank is slipped over the extreme and smooth part of the shaft, which is prevented from slipping out by means of a collar fitted thereto. A washer is placed between the two opposite surfaces of the crank-end and screw collar, which are brought close together and kept in position by a pin passing through the shaft. The forward movement of the crank will press these two surfaces closer together, and produce the revolution of the shaft; while, if the pin is knocked out the movement of the crank reverses, and the collar screwed back 1-16th of an inch, the contrary effect will take place. 7. The application of the last-mentioned arrangement to stationary engines. 8. The employment of counterbalance weights in marine engines, which are made to revolve in the same horizontal plane as the cranks.

Claims.—1. Placing the axle of driving wheels behind the fire-box, in combination with the water tank and coke box on the same frame with the boiler. 2. The use of the tubular boiler with the axle of the driving wheels placed under the fore-end of it, and which is made to work or revolve as before described. 3. Arranging the connecting and disconnecting apparatus of steam-engines, so that when two surfaces or discs are employed, the forward motion of the crank shall have the effect of uniting them more firmly. 4. The mode of counterbalancing unequal motion in marine steam-engines.

T. LAWES, gentleman, City-road: Improvements in generating steam, and in the means of obtaining and applying motive power. Mr. Lawes' improvements in generating steam for motive power purposes consist in a peculiar combination of a boiler and furnace in one apparatus. The water is forced by a pump from a reservoir into a chamber, which forms the two sides and back of the furnace, whence it passes through a series of horizontal pipes placed in the flues, formed by brick partitions, over which the products of combustion pass and re-pass prior to escaping up the chimney; the steam generated in these horizontal pipes ascends into a series of vertical pipes, and passes thence into horizontal steam tubes, which serve the purpose of a steam-chest, one of which is provided with a safety valve. To generate steam for cooking, boiling, &c., it is proposed to place two reservoirs of water on the hobb of an ordinary kitchen range, and to connect them by means of pipes, which answer the purpose of bars in the front and bottom of the stove. The improvements in "obtaining and applying motive power" embrace—1. A modification of a system of atmospheric propulsion, formerly patented by Mr. Lawes, and which consists in the substitution of a series of short tubes for one entire tube, reaching from end to end of the line. One end of each length of tube is closed, and a partial vacuum is created therein by drawing a piston from the tube to the open end. 2. A method of applying motive power, placed in a boat, or vessel floating in a canal, to a carriage with cog-wheels gearing into racks fixed by the sides of two rails on either bank of the canal, by means of one drum on the driving axle of the carriage, and another in the bow of the boat. The tractive power resulting therefrom is communicated from the carriage to the boat. And—3. A mode of applying motive power to the tilting of land, by dragging a plough or harrow backwards and forwards over the surface of the soil.

W. GOOSE, of Birmingham, manufacturer: Certain improved machinery for manufacturing nails. The object of the present invention is to grip the partially formed nail on the edges instead of the ends, as has hitherto been usual; and this is proposed to be effected by adapting to the ordinary nail-cutting machine, an apparatus which consists of a revolving vertical spindle with an arm curved upwards, which carries at the free or open end a bent horizontal bar of steel, termed in the specification a "spring nipper." When the partially formed nail is separated from the iron plate, one of its ends is caught by the extremity of the spring nipper at a point beneath the horizontal right line, in continuation of the end of the nail. The spring nipper, which is hitherto used to grip the nail at the end, will be caused to make a portion of a revolution, and to assume a vertical position instead of the usual horizontal one, when the moveable die is to be brought into action.

Claim.—The employment and construction of a spring nipper in addition to nail-making machines, for causing the partially formed nail to make part of a revolution.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

W. Cram, of Thornhillbank, Renfrew, Scotland, for certain improvements in the finishing of woven fabrics.
C. Montgomery, Esq., of the Army and Navy Club, St. James's-square, Middlesex, for improvements in brewing, distilling, and rectifying.
W. Eccles, the elder, W. Eccles, the younger, and H. Eccles, of Blackburn, Lancashire, cotton spinners, for certain improvements in machinery or apparatus for preparing, spinning, and weaving cotton and other fibrous substances.
J. Paradis, of Lyons, France, merchant, for improvements in the manufacture of elastic mattresses, cushions, and paddings; part of which improvements are applicable to other purposes where sudden or continuous pressure is required to be sustained or transmitted. (Being a communication.)
G. Buchanan, of Edinburgh, civil engineer, for improvements in cocks, valves, or stoppers, and in the use of flexible substances for regulating or stopping the passage of fluids, and also the making of joints of tubes and pipes or other vessels.
Brian James, of Erie, Vanier, the elder, of Margaret-street, Cavendish-square, Middlesex, for improvements in the manufacture of axle-tree-boxes for carriages, and of the bearings of the axles of railways, and in the making of an alloy of metal suitable for such and like purposes.
G. E. Donisthorpe, of Leeds, York, manufacturer, for improvements in wheels of locomotive carriages.
P. Fairbairn, of Leeds, York, machinist, and J. Hetherington, of Manchester, for certain improvements in machinery for preparing and spinning cotton, flax, and other fibrous substances.
S. Fisher, of Birmingham, Warwick, engineer, for improvements in railway carriages, wheels, axles, buffer and draw springs, and hinges for railway carriages and other doors.
E. Carter, of Merton Abbey, Surrey, machinist, for improvements in printing calico and other fabrics.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

W. Burgess, Blackfriars-road, Great Perth hose joints.
F. Klam, York-street, Commercial-road East, rotary heel tip.
W. Murray, University-street, compensating ball lever.
W. Broughton, South-street, Finsbury-market, ne plus ultra stove.
R. Bell, Basing-lane, metallic fuse box.
T. Curry, Bristol, configuration and arrangements of a steam-boiler.
S. Whitfield, Birmingham, window cornice and cornice pole.
G. Chance, of Bolton, Brad, kitchen sink, grate.
J. Cocker, of Bolton, brush.—*Mechanics' Magazine.*

ACCIDENTS.

Widnesbury.—Joseph Grew was killed while working in one of Messrs. Bagnall's pits at Hill Top, by a quantity of coals falling upon him.
Blackburn.—An accident of a fatal nature occurred in a coal-pit belonging to Thomas Stimpson, Esq., in Oswestle. The unfortunate man was working in the pit when the roof fell in, and a fellow workman, who was near the spot, had a narrow escape; deceased was much hurt in the back, and when extricated was dead. The roof was good, and there did not appear to be blame attached to any one.
Wolverhampton.—As two men were occupied at the Crane Foundry, Horley-fields, in putting into an oven a "healing pot," used for the purpose of making tin pliable, the pot of one of them caught against a plate in the ground, when he fell with the pot upon him, the side of his head struck his right leg, producing two punctured wounds, and fracturing two bones. The weight of the pot was nearly 2 cwt.
Cowley.—D. Parren was seriously injured by a fall of roof, while employed in Mr. W. H. Whitehouse's pit, filling a wagon with dirt and stone.
Dudley.—J. Hall was killed by the falling of a "clod" of earth while employed in one of Messrs. Gracbrook's fields.
Wigan.—As Aaron Jolly was hooking on a ship at the bottom of a pit, belonging to Messrs. Ryland, one of the hooks caught in the bottom of the pit, and the ship began to ascend; he instantaneously passed his arm round the guide rod, and was thus drawn up 600 feet, when his head coming in contact with a projection, it made him let go his hold, and he was drawn up the remaining 120 feet with his head hanging down. He hung over this abyss for some seconds, the men at surface being completely paralysed at the sight. At length he was extricated, with a slight injury to the arm from friction against the guide rod.

An accident of a serious nature occurred at the pit belonging to Henry Woods, Esq., Woodhouses, on Tuesday last. The men went to their work at six o'clock, and about twenty of them descended the pit; about an hour afterwards an explosion of fire-damp took place, when the men, in great alarm, moved to the eye of the pit; they got into the cage, and were ascending, when a loud cry was heard, and it was ascertained that the head of a boy, named Howarth, had been severed from his body; his body was afterwards found below, with the left leg and right arm severed and lying at a distance. He must have been thus mutilated by being crushed between the tip and down cages when they met. He had only been down the pit once before, and the accident may be attributed to his inexperience. Others were slightly injured in their haste to get into the cage, and two or three sustained severe burns from the explosion. (Mr. Rogers, the coroner for the district, refused to admit the reporter of the *Liverpool Mercury*, on the ground that he was the author of a paragraph which appeared in a previous number of that Journal, offensive to his coronership, and, among other obnoxious expressions, he called him a d—d rascal. Is this coroner in the habit of allowing his worst passions to interfere with the administration of public justice, or had he been indulging a little more than usual on this occasion? A verdict of "Accidental death" was returned.)

IRON, HARDWARE, AND METAL TRADES' PENSION SOCIETY.

SOCIETY.—THE EIGHTH ELECTION OF PENSIONERS will take place in MAY, 1855. The candidates must be deserving and necessitous persons, occupying, or having occupied, the station of Master, Traveller, Clerk, Warehouseman, Foreman, or Apprentice, in any branch of the Iron, Hardware, or Metal Trades, in any part of Great Britain, or the Widows of such persons.

Printed forms of application may be had (by parties recommended by two subscribers) of the undersigned, to whom they are to be returned, filled up with the required particulars, on or before the 4th of February next, after which day no application relating to this election can be received.

At the Seventh Election, held at the London Tavern, on the 26th November last, the following were elected to pensions of 20 guineas each per annum:—

George Austin, of London, by.....	3441 votes.
John Large, of Birmingham, by.....	1723 "
John Fletcher, of Birmingham, by.....	1869 "
William Dods, of Westminster, by.....	888 "
Sarah Ann Smith, of Southwark, by.....	1013 "
Mary Heath, of Chelsea, by.....	618 "

Total number of pensioners on the books, 30.
67, Upper Thames-street, London, Dec. 5, 1849. THOMAS HAWKINS, Hon. Sec.

SEA, FIRE, LIFE ASSURANCE OFFICE, CONNECTING THE MINING INTERESTS OF ENGLAND AND WALES.

(ESTABLISHED BY ACT OF PARLIAMENT.)
31, CORNHILL, LONDON.

Capital £100,000, in shares of 20s. each, to be paid in full on allotment, bearing a guaranteed interest of 5 per cent. in perpetuity (irrespective of further dividends) upon the paid-up capital.

Application for shares to be addressed to the Directors, at the offices of the Society.

Marine, fire, and life assurances granted on the most liberal terms.

Immediate and deferred annuities granted on terms especially advantageous for investment of capital.

By order, AUG. COLLINGRIDGE, Managing Director.

SPECIMENS OF THE RATES OF PREMIUM FOR ASSURANCE OF £100.

Age.	With Profit.	Age.	Without Profit.
20	£1 19 3	30	£1 14 6
30	2 11 3	40	2 8 1
40	3 8 3	50	3 0 2

The whole of the Profits from the Life Department divided amongst the Policyholders. All Life Policies indispensible.—All Life Policies free of stamp duty.

ALFRED BURT, Actuary.

* WANTED, AGENTS AND MEDICAL REFEREES for the PRINCIPAL TOWNS in the KINGDOM.

COUNTY SURVEYORS ALSO REQUIRED.

AGENTS WANTED IN DEVON, CORNWALL, AND NORTH AND SOUTH WALES

SCOTTISH AMICABLE MUTUAL LIFE ASSURANCE SOCIETY.—ESTABLISHED 1826.

LONDON OFFICES—No. 43, LOMBARD-STREET.

PRESIDENT.

THE MOST NOBLE THE MARQUIS OF DALHOUSIE.

VICE-PRESIDENTS.

HIS GRACE THE DUKE OF BUCKLEIGH.

JOHN CAMPBELL COLQUHOUN, Esq., of KILMARNOCK.

A Policy of £1000, opened with this Society in 1840, was, in 1846, by the addition of £2 per annum on every £100, increased to £1120. And, by the above principle of this Society, an addition of 2 per cent. per annum, upon the above accumulated sum of £1120, gives, as the value of the original policy of £1000,

In 1849, if it then becomes a claim	£1187 4 0
1850	1209 12 0
1851	1232 0 0
1852	1254 8 0

TABLE.—Illustrating Accumulation of Additions on £1000 Policy on Society's Plan:—

Amount with Additions. Sum of Premiums paid according to Ages at entry.

At end of	At 2 per cent.	20.	27.	34.	41.
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Years.	per ann.	£145 5 0	£167 8 4	£196 5 10	£235 19 2
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6	1276 16 0	290 10 0	334 10 8	392 11 8	471 18 4
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13	1659 6 7	581 0 0	669 13 4	785 3 4	943 16 8
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27	2802 10 10	1162 0 0			
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New entrants admitted to every advantage.

Immediate, deferred, and survivorship annuities granted.

Every facility afforded to assureds.

THE WHOLE PROFITS DIVIDED AMONG THE ASSURED.

Manager—WILLIAM SPENS.

Resident Secretary in London—J. E. C. KOCH

MINING IN THE FOREST OF DEAN.—INJUNCTION.—On Thursday last, in the

Vice-Chancellor's Court, a case came on for hearing, in which one, Matthews, was plaintiff, and the Earl of Carlisle, as gavelleur of the Forest of Dean, defendant.

It was a motion to dissolve an injunction obtained in October, to restrain the earl from granting a gale of an iron mine in the Forest to a person named Nehemiah Marfell.

Some time since the latter obtained one gale, and he had given the usual notice that he should require another; and, on the 1st of October last, the plaintiff, who said he had a previous allotment of that particular gale, obtained an injunction, preventing the earl from granting it to Marfell.

The arguments in favour of the injunction were, that the application was not written by Marfell as the Act requires, and that the gale was unlawfully enclosed. On the other hand it was contended that Marfell's signature was sufficient, and that the enclosure was perfectly legal. The Vice-Chancellor, under all the circumstances, particularly as the gavelleurs themselves made no application, refused the motion, thus continuing the injunction.

RAILWAY TRAFFIC RETURNS.

Names of Railways.	Length, 1849-1848.	Present actual cost.	Price p. share 1848.	Div. 1848.	Traffic Returns, 1849-1848.
Aberdeen	87 16	1,000,547	112	—	£ 767 £ 230
Belfast and Ballymena	37 37	514,968	194	5	439 367
Birkenhead, Lancashire, & Chesh.	19 15	1,088,804	37	5	377 661
Bolton, Blackburn, & West Yorkh.	14	786,384	6	—	757 251
Bristol and Exeter	85 75	3,660,490	524 84	—	3204
Caledonian	160 141	5,149,320	112	3	6054 4077
Chester and Holyhead	94 59	3,358,217	102	4	1250 1167
Dublin and Drogheda	38 29	778,565	261	—	667 615
Dublin and Kingstown	7 7	259,515	—	—	833 903
Dundee, Perth, & Aberdeen Junction	47 47	544,554	134	64	925 1004
East Anglian (Lynn to Ely)	91 50	1,247,446	14	—	624 657
East Lancashire	75 24	2,628,519	124	5	2741 1569
Eastern Counties and Norfolk	322 305	12,027,069	72	—	13898 12668
Eastern Union	78 50	1,782,703	13	—	1614 1100
Edinburgh and Glasgow	57 52	2,923,199	292	6	3167 3007
London and North Western	78 34	2,241,276	108	2	2170 1580
Edinburgh and Northern	102 74	2,574,330	47	3	2707 2420
Glasgow, Paisley, and Ayr	23 23	852,846	14	2	971 854
Gt. Northern & East Lancashire	143	5,138,756	74	57	2928
Gt. Southern & Western, Ireland	188 110	3,552,589	312 2	67	3686 3018
Great Western	230 206	11,867,042	582	64	— 10616
Lancaster and Carlisle	90 70	1,476,102	48	4	2879 1813
Lancashire and Yorkshire	220 127	10,063,862	624	52	10779 9749
Liverpool, Crosby, & Southport	47 428	26,881,630	113	7	37782 35599
London and Blackwall	5 4	1,299,675	3	1-12	529 549
London, Brighton, & South Coast	170 102	6,502,600	80	24	8069 7477
London and South-Western	221 194	7,874,239	312	34	8365 7663
Londonderry and Enniskillen	14 14	185,739	16	—	118 105
Manchester, Sheffield, & Lincolnsh.	157 94	6,598,260	17	5	4753 2518
Midland Company	483 428	15,133,779	504	54	20049 20061
Midland Great Western (Irish)	50 36	725,352	23	4	1114 1112
Norfolk	36 36	486,945	—	—	—
North British	122 83	3,649,055	114	4	3113 2374
Scottish Central	45 45	1,364,228	164	7	1143 904
Shrewsbury and Chester	49 33	969,618	12	5	1438 1316
Shropshire Union	30	—	34	—	359
South Devon	57 29	1,509,232	8	5	1129 1073
South-Eastern	189 160	8,666,007	90	54	8404 7075
Taff Vale	38 40	879,110	—	72	2029 1736
Ulster	35 35	723,825	45	—	749
West Cornwall	13	—	612,894	—	219
Whitehaven Junction	12 12	150,879	94	3	205 170
York, Newcastle, & Berwick	290 242	6,827,849	174	7	12033 13827
York and North Midland	260 234	4,983,618	18	7	6285 7029

NORTH STAFFORDSHIRE.—Return of traffic, &c., for the month of October, 11,7962.3s. 5d. interest on debentures and canal shares, 65751; estimated balance available for dividend on share capital, 20767.1s. 1d.—gross receipts for canal and railway, 20,447.4s. 6d.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Carr's Hartley 15—Davison's West Hartley 15—East Ayr's Main 13 9—Hastings Hartley 15—Old Tanfield 14 6—Ord's Redhaugh 14 6—West Wylam 15 6—Wall's End Brown's Gas 13 9—Hotten 15—Whitworth 15—Yess 19—Anthe 25—Birchgrove Graigola (hand-picked) 19 9—Cowpen Hartley 15—Nixon's Merthyr and Cardiff 21 6—North Abbey Graigola 22—Sidney's Hartley 15—Ships 24; sold 19
WEDNESDAY.—Carr's Hartley 15 6—East Ayr's Main 14—Hastings Hartley 15—Old Tanfield 14 6—Ord's Redhaugh 14 6—West Wylam 15 6—Wall's End Brown's Gas 14—Bell and Brown 17 6—Burraton Killingsworth 17 6—Hedley 17—Hotsprings 16 3—Lambton Primrose 17 9—Brampton 18—Hotten 19—Hawwell 19—Lambton 18 3—Stewart's 18 9—Dennison 16 9—Hartlepool 18 9—South Hartlepool 17 6—Tees 18 9—Birchgrove Graigola (hand-picked) 19 6—Cowpen Hartley 15 6—Derwentwater Hartley 15—Nixon's Merthyr and Cardiff 21 3—Sidney's Hartley 15—Ships, 49; sold, 30.
FRIDAY.—Carr's Hartley 16—West Wylam 15 6—Wall's End Bewick and Co. 17 9—Killingworth 17 6—Northumberland 16 6—Washington 17—Eden Main 18—Belmont 18 6—Bradley 19—Retton 19—Lambton 18 6—Stewart's 19—Caradoc 18—Carnegie 18—Beugh Hall 16 6—Hartley 19—Hotten 19—Whitworth 15 6—South Hartlepool 18 6—West Hotten 17 6—Whitworth 15 6—Adelaide Tees 18 6—Cowden Tees 17 9—Seymour Tees 17 6—South Durham 17 9—Tees 19—Birchgrove Graigola Hand-picked 20—Nixon's Merthyr and Cardiff 21 6—Ships at market, 59; sold, 48.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular

MONTHLY MAIL (steam navigation) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY

BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from

Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th

of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez

by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 30th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 17th, 18th, and 24th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 192, Leadenhall-street, London; and 57, High-street, Southampton.

GREAT EXHIB